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Badger Mills New Building Nearly Finished

Construction Work On New Structure For Finishing Department of Badger Paper Mills Practically Completed—New Bill Introduced On Waste Disposal of Sulphite Mills — Other Late News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., February 10, 1941—Practically all the construction work has been completed by the Badger Paper Mills, Inc., Peshtigo, Wis., on its new building which will house its finishing department. Installation of the heating equipment and two large freight elevators will be finished within a few days. Within about ten days, the operating facilities will be added so the unit can be used for production.

The building is 200 by 130 feet in size, built in modern, fireproof style, and will house the latest in equipment. It will permit of a considerable expansion of productive facilities. Approximately 100 employees will be housed in this structure.

Thilmany Starts New Safety Contest

Safety and personnel activities of the Thilmany Pulp and Paper Company, Kaukauna, Wis., are being stimulated through new ideas placed in effect by L. C. Smith, personnel director.

A new safety contest has been started, embracing employees of all departments, who will try to outdo what has been considered an outstanding program in the past. Two teams, known as the "Reds" and "Blues" will operate on a point system to win a prize of $100 at the expiration of a six-month period June 30, 1941. Teams start out with 10,000 points each, and gain or lose each thirty days according to lost-time accidents or those requiring medical attention. Extra points are awarded each time a member of a team purchases safety shoes. The grand prize may be used for a banquet or picnic, or divided into individual cash awards.

Another activity is the formation of the Thilmany Quarter Century club, made up of employees who have served the company twenty-five years or more. Organization took place at a dinner last week at Hotel Kaukauna, at which Mike Gerharz was elected president, and William Voie, vice-president. The club has a roster of 79 members who have worked for the company from 25 to 45 years. Motion pictures taken at the mill were shown after the dinner.

Thirty-one Thilmany employees who have been attending sessions of a first aid class have become eligible for first aid certificates of the American Red Cross. Harold E. Newton has been the instructor. Girls in the group have been taught home and personal hygiene by Mrs. Hazel Leedke, company nurse.

Testing New Kimberly-Clark Product

Experimental use of the Kimberly-Clark Corporation's new product, Kimsul, is being made at the office of the Appleton Post-Crescent at Neenah and Menasha, Wis. It is being tested for acoustical purposes by hanging strips of the material mounted in frames to study its sound deadening effect. Kimsul is creosote coarse wadding covered with muslin. Its principal use is for insulation of homes, buildings, automobiles, refrigerators and other things. It is being manufactured in the company's new Badger-Globe mill.

Paper Mills Assessed Water Tolls

Water power tolls assessed against paper mills and power companies of the Wisconsin River Valley for the last six months of 1940 will amount to $94,000, according to a schedule filed by the Wisconsin Valley Improvement Company, Wausau, Wis., with the Wisconsin Public Service Commission. The fees cover operation of a series of control dams and reservoirs on the upper river.

Included in the assessments are: Wisconsin Public Service Corporation, Eagle River dam, $242, Hat Rapids dam, $1,362, Jersey Dam, $417, Tomahawk dam, $1,825, Grandfather dam, $13,361, Alexander dam, $3,225, Merrill dam, $227, and Wausau dam, $3,946.

Consolidated Water Power and Paper Company, Stevens Point dam, $4,811, Biron dam, $6,907, Wisconsin Rapids dam, $9,069.

Nekoosa-Edwards Paper Company, Centralia dam, $4,270, Port Edwards dam, $4,778, Nekoosa dam, $4,955.

(Continued on page 24)

C. P. P. A. Plans To Increase Its Personnel

Resolutions Approved By Canadian Pulp and Paper Association To Appoint Assistant Secretary and Statistician—Prominent Paper and Pulp Men On Executive Committee—Other Late Industrial News.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., February 10, 1941—Following the annual meeting of the Canadian Pulp and Paper Association, it was announced that the meeting had been the most successful ever held from the point of view of attendance, the total number at the concluding luncheon being 775, while attendance at both the Woodlands and Technical Section's meetings was well in excess of that for the preceding year.

Additional Personnel Approved

The fact that at the meeting resolutions were approved for appointing an assistant secretary and a competent statistician to relieve the secretary manager, A. E. Cadman, as well as a secretary for the Technical Section and a secretary for the Pulp and Paper Institute of Canada, foreshadows increased scope and usefulness for the association. Mr. Cadman was warmly complimented for his management of the widely-diversified duties falling to his office. He has been secretary-manager of the Canadian Pulp and Paper Association since 1931, succeeding the late Edward Beck with whom he had worked for the previous 10 years as assistant-secretary. He has been associated with the pulp and paper body, accordingly, during the past 20 years which have seen the industry grow from a baby in swaddling clothes to one of the most important industries in the Dominion, especially from the point of view of external trade and employment.

Mr. Cadman joined the association in 1921 after having previously been attached to the Canadian Export Paper Co. and to him goes much of the credit for the abundance and excellence of the statistical material that has been developed. He is a graduate of Queens University who specialized in statistics and is a fellow of the Royal Statistical Society.

Men on Executive Committee

The Executive Committee of the Association, as now constituted, under F. G. Robinson (re-elected as president), consists of W. S. Kidd, of the E. B. Eddy Company, Ltd.; E. M. Little, Anglo-Canadian Pulp and Paper Mills, Ltd., and Gaspesia Sulphite Company, Ltd.; P. H. Scowen, Brompton Pulp and Paper Company, Ltd.; E. Howard Smith of Howard Smith Paper Mills, Ltd.; W. H. Smith of Abitibi Power and Paper Company, and J. Pierre Rolland, of Rolland Paper Company, Ltd.

A feature at the annual meeting was the presentation of a loving cup to C. R. Whitehead, assistant to the president of the Consolidated Paper Corporation. The gift was from a selected group of his fellow executives and was in recognition of his many years of service in the industry. S. L. de Cartaret, vice-president of the Canadian International Paper Company, handed him the cup, and expressed the felicitations of the gathering.

New Markets for Wood Products

The Forest Products Laboratories at Ottawa has issued a report on the expanding use of plastics in providing new important markets for wood. The report states that although cotton still remains the main source of cellulose for plastics, wood pulp has replaced it in many instances, and since wood pulp is cheaper than cotton cellulose, it will undoubtedly replace cotton more and more as new uses for plastics are developed.

The nitrates and acetates are the most extensively used cellulose plastics. Nitrate, prepared in considerable quantity from wood cellulose, is used in the making of fountain pens, brushes, cutlery handles, and all sorts of novelties. Except in the field of explosives, acetate is superior to nitrate for many purposes. It is used in airplane dopes and windshields, eyepieces for gas masks, lamp shades, handles for tools, various automobile body parts, advertising signs, and because of its less inflammable nature is replacing nitrocellulose in the manufacture of photographic film. Cellulose acetate is now reported to be produced from wood cellulose in England, and there are many patents in the United States covering its production from this material.

Other less extensively used cellulose plastics are the ethyl, methyl, benzyl, acetobutyrate and acetopropionate derivatives. Ethyl cellulose is used in films, as an adhesive, in coating materials and in moulded form for home construction. Methyl cellulose is used in industrial operations such as dispersing, emulsifying and sizing; benzyl cellulose as transparent wrapping paper with waterproof qualities; cellulose acetobutyrate for outdoor furniture and in lacquers and other protective coatings. Cellulose acetopropionate is used in photographic films, particularly for X-ray purposes.

New Literature

Modern industrial weighing is the subject of a broadside issued by The Exact Weight Scale Company, Columbus, Ohio. It lists and illustrates a large line of scales adapted to the requirements of a large number of industries.

Pressure sight feed oiler, Figure 817, is a new unit described in a bulletin just issued by S. F. Bowser & Company, Fort Wayne, Ind. This oiler is especially designed to permit regulation and observation of oil flow from a point remote from the bearing to be lubricated.

"World-Wide Refractories Service," a 48-page export booklet, has just been issued by the General Refractories Company, Philadelphia, Pa. This book is printed in both English and Spanish, contains color throughout, and has sixty-five illustrations in addition to thirty technical drawings of brick shapes and sizes. It covers descriptive information on all the major types of refractories and their uses, describes methods of shipment for export and incorporates ten pages of such tables of sizes, weights, volumes and general data as are usually required in the use, application and purchase of refractories.

Broader Paper Demand Reported in Midwest

Many Grades of Paper Reflect Firmer Tone As Demand Improves —Illinois Legislative Bills Present New Problems To Paper Men— Package Competition Attracting Attention — Other Late News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., February 10, 1941—A continuing broadening of demand was the major characteristic of the week in local paper markets. Dropping any spottiness that might have prevailed earlier, the market moved into a position where demand was becoming more and more general and where the tone was getting definitely stronger, according to local commentators. Within the general group of papers, kraft continued to move into a much stronger position with virtually all of the "slack" reported as taken up and an improved outlook ahead. Books took stronger tones this week while covers likewise reflected a broadening out of business in general. Sulphites were steady to strong in the varied reports that came in while groundwoods and newsprints likewise found the undertone to be much better to their liking. In general, the local market improved its position materially by "catching up" with a considerable amount of looseness that revealed itself during inventory and pre-inventory period. Once these loose spots are definitely eliminated the combination of tremendously mounting costs and shortages of raw materials was expected to force the industry into a higher price structure. Waste papers continued firm locally with the higher grades reported as evidencing the stronger tone of the group.

Package Competition Creates Interest

Many Chicago and Illinois concerns, either paper firms or supply houses, were watching with interest the 1940 All-America Package Competition which has been under way in New York City. Entries, many of them from this area, were made under 20 classifications including folding cartons, collapsible tubes, fibre cans, set-up paper boxes, plastic containers, shipping containers, opaque envelopes, transparent envelopes, labels and seals and closures. According to those who have witnessed the exhibits, there is a definite trend toward a wider use of transparencies of all types. Also an emphasis on simplification of form and design in all types of packages. Labels were becoming more and more informative with useful data accompanying natural color reproductions of the package content. Award plaques will be officially presented at the Modern Packaging banquet to be held at the Hotel Stevens, Chicago, on April 2.

Legislature Presents New Problems

The Illinois Legislature went into "high gear" this week with the introduction of 100 House bills and about 40 Senate proposals. Included in the list of those thrown into the legislative hopper were many which are of direct concern to manufacturers of paper as well as paper supply firms in this State. Among these were proposals to extend the Wage-Hour law to intrastate workers, to eliminate "espionage" in industrial plants, to set up a State fund for dispensation of workmen's compensation and occupational disease insurance, a wage kick-back proposal and some very liberal proposed amendments to the State Unemployment Compensation Act. These latter amendments were thrown into the House Judiciary Committee where in all probability, they will be referred to a sub-committee and thence to a joint committee of employers and employees for further study. The graphic arts trades as well as other allied groups are deeply interested in possible amendments to the job tax act and representatives will be present at a February 3 meeting when employer organizations will discuss the proper procedure to follow. The week also witnessed the introduction of proposals to reduce the 3 per cent sale tax to 2 per cent and to eliminate foods from coverage under the Act, both proposals being seemingly impossible in view of the demands on the State for increased old age pensions and rising relief standards. Members of the paper industry are on important legislative committees of five of the larger employer organizations in this State and are actively participating in the job of watching out for legislative developments at Springfield.

Paper Men In Other Groups

R. G. Paramore of the Central Fibre Products Company of Quincy, Illinois, has been appointed a member of the advisory committee of the Illinois Manufacturers Association for the coming twelve months period. He will represent his particular industry in the work of the Illinois Manufacturers Cost Association, a subsidiary unit of the Manufacturers organization. Directors of the Association include G. G. Otto of the Alton Box Board Company of Alton, Illinois, and Alfred Kaufman of the Link-Belt Company, Chicago.

Stein Hall Executive To Speak

Alexander Frieden, technical expert affiliated with the Stein Hall Manufacturing Company of Chicago and New York, is listed as one of the speakers at the annual meeting of the Technical Association of the Pulp and Paper Industry to be held in New York in conjunction with the annual get-together of the industry on February 17. Mr. Frieden will discuss "Enzyme Conversion" on a program filled to the brim with interesting technical subjects.

Salesmen Ponder Transportation Problems

To date the western division of the Salesmen's Association of the Paper Industry has not decided on whether to charter a special car or two for the trip to the N.P.T.A. convention on February 17. It is understood, however, that the matter will be brought up at the regular Monday meeting of the Association on February 3. It may be, according to reports, that the SAPEYES will again abandon the idea of a "special" because of the tendency of some executives to either fly to New York or go by automobile.

Newsprint Mills Have Large Idle Capacity

Opinion From Various Sources Cautions Against Taking Over-Optimistic View of Canadian Newsprint Industry—Idle Capacity Now About 1,000,000 Tons — Commission Report Not Published.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., February 10, 1941 — The present position and future prospects of the newsprint industry in Canada concerns not only those directly interested in pulp and paper, but the public generally, especially the investing public. That explains the widespread interest in the proceedings of the royal commission which recently concluded its investigations into the affairs of the Abitibi Power and Paper Company, one of the three largest newsprint companies and the history of which reflects more or less the problems which have faced the industry. The royal commission has not yet reported its findings and in the meantime discussion continues of the various opinions expressed by witnesses before the commission, some of which opinions cannot be reconciled with known facts.

Cautions Against Over-Optimism

The *Financial Post,* of Toronto, reviews some of these statements in its current issue and comments that some of the views expressed betrayed the same over-optimism which has been so expensive in the past and which "has been the root reason for Abitibi's present difficulty."

Quoting the financial paper, here are some of the statements, made by responsible individuals, to the commission: "The story of the Canadian newsprint over the past 24 years demonstrates the inherent soundness of the industry."

"The present competitive situation as it affects . . . the industry generally, justifies confidence in the future prosperity of the newsprint business."

"At no time in the past 24 years has Scandinavian competition been a source of embarrassment to Canadian newsprint producers. The facts are that the natural markets for Scandinavian paper are in Europe and Great Britain, just as the most natural market for Canadian newsprint is in the United States."

"Consumption has now approached so close to productive capacity that there is no pressure to cut prices, as all companies with sound mills and reasonably satisfactory management can operate at comfortable profits."

Weak Spots in Newsprint Industry

The *Financial Post* proceeds to point out that these views tend to give the definite impression that the past mistakes have been completely rectified, the present difficulties non-existent and that the future holds no serious danger to the industry, but continues to show that these views are not unanimous among interested parties and that the evidence of G. T. Clarkson, receiver and manager of Abitibi during the last ten years, gives a quite different impression. Contrary to there being "inherent soundness", "no pressure to cut prices", "future prosperity, etc.", Mr. Clarkson's evidence drew attention to the present unsatisfactory position of the industry due to infraction of prorating rules and emphasized the need for conserving cash resources against the difficulties of the future.

The annual review of the industry by Charles Vining, president of the Newsprint Association of Canada, throws out a word of caution as to the present and doubt as to the future. He, like Mr. Clarkson, stresses the abnormality of some of the industry's advantages and is frankly concerned over what will happen after the war.

Mill Operation Under 80% in 1940

The facts seem to be that in 1940, the Canadian mills, with everything in their favor, operated at less than 80% of capacity and had nearly a million tons of idle capacity. The operating percentage of the prorating mills in Ontario and Quebec, which constitute the bulk of the industry, was no higher than 72%. This rate of operations was achieved for the sole reason that Canada's Scandinavian competitors were prevented from shipping about 700,000 tons to competitive markets in 1940. They would be able to resume that business just as soon as shipping facilities are available. It is argued that if this tonnage were released from Scandinavian mills, Canadian shipments would immediately shrink by that amount because Scandinavian sales have invariably been made at price differentials below Canadian quotations. Moreover, Scandinavian capacity has increased from about 700,000 tons a year in 1930 to about 1,200,000 tons in 1940; their total exports have risen from 600,000 tons in 1930 to about 850,000 tons in 1939. If there had been no war it is likely Scandinavian shipments would have reached closer to a million tons and nearly all their increase in exports has been at the expense of Canadian mills.

In 1939 only about 30% of the Scandinavian exports went to Europe and Great Britain and the remainder to the United States, Latin America and Asia, in direct competition to Canada. As a matter of fact, increases in Scandinavian shipments during the last ten years, have been exclusively in non-European markets. In 1939, 60% of their total exports went to the western hemisphere. In the same year they supplied 12% of the total United States imports of newsprint and over 75% of total imports into Latin America.

Another important factor has been the exchange situation. If Scandinavian countries can undersell Canadian mills in what is termed Canada's "natural" market while Canadian mills are getting the advantage of a 10% premium on their money values, what are the prospects for Canadian mills holding their present sales volume in their own "natural" market when the war has been ended and the exchange situation becomes normal?

No wonder Canadians who have invested in pulp and paper enterprises await with anxiety the report of the royal commission on the Abitibi Power and Paper Company.

Slime Control for Pulp and Paper Mills

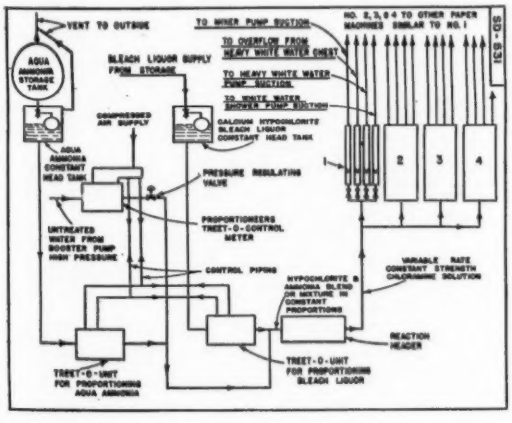
%Proportioneers, Inc.% offers the pulp and paper making industry a new method and equipment for reduction of algae growths in white water systems. The apparatus automatically prepares constant strength chloramines and proportions the treating solution accurately to any desired number of points at the wet ends of the paper machines. The feed is based on white water chloramine demand, thus making it possible to maintain a constant low residual of chloramines throughout the entire system.

In the past, chlorine and chloramine treatment of white water systems has not been adopted due to the fear of sloughing off an accumulation of slime. It has now been determined that when chloramines are introduced at only one or two points in the system, the dosages must be high in order to carry the residual throughout the system. High concentrations tend to loosen large amounts of slime from the inside surfaces of pipe lines and tanks, and these are carried through into the finished paper causing spoilage.

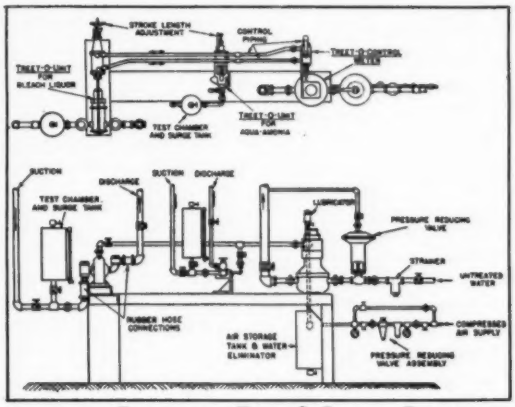
Proportioneers packaged chloramine equipment is so designed that the dosages injected into the suction of the mixing pump, the overflow from the heavy white water chest, the suction of the white water pump, and the suction of the white water shower pump can be individually and accurately controlled so as to maintain a residual chloramine value of only two tenths part per million throughout the entire system.

With this low residual of chloramines the slime producing bacteria and algae can not multiply, and the accumulation which is already in the system is removed gradually. Obviously accurate maintenance of the proper chlorine-ammonia ratio, and accurate control of feed at every one of the points of injection are of paramount importance, spelling the difference between results which mean saving of present losses, and the cure which is worse than the difficulty in the first place.

The Automatic Chloramine Proportioneer consists of a water meter controlling two proportioning pumps for hypochlorite solution and aqua-ammonia respectively, a pressure regulator which acts as a flow controller, a reaction header, and a battery of rotameters with their control valves, rubber chemical tubing and other accessory material.


VENT TO OUTSIDE
TO MIXER PUMP SUCTION
TO OVERFLOW FROM HEAVY WHITE WATER CHEST
TO HEAVY WHITE WATER PUMP SUCTION
TO WHITE WATER SHOWER PUMP SUCTION
NO. 2, 3, & 4 TO OTHER PAPER MACHINES SIMILAR TO NO. 1
SD-531
AQUA AMMONIA STORAGE TANK
BLEACH LIQUOR SUPPLY FROM STORAGE
COMPRESSED AIR SUPPLY
CALCIUM HYPOCHLORITE BLEACH LIQUOR CONSTANT HEAD TANK
AQUA AMMONIA CONSTANT HEAD TANK
PRESSURE REGULATING VALVE
PROPORTIONEERS TREET-O-CONTROL METER
UNTREATED WATER FROM BOOSTER PUMP HIGH PRESSURE
CONTROL PIPING
HYPOCHLORITE & AMMONIA BLEND OR MIXTURE IN CONSTANT PROPORTIONS
VARIABLE RATE CONSTANT STRENGTH CHLORAMINE SOLUTION
REACTION HEADER
TREET-O-UNIT FOR PROPORTIONING AQUA AMMONIA
TREET-O-UNIT FOR PROPORTIONING BLEACH LIQUOR
1
2
3
4

FLOW DIAGRAM OF TREET-O-CONTROL PROPORTIONEER FOR CHLORAMINE TREATMENT OF WHITE WATER IN PAPER MILLS.



INSTALLATION DIAGRAM OF TREET-O-CONTROL PROPORTIONEER FOR CHLORAMINE TREATMENT OF WHITE WATER IN PAPER MILLS.

Installation diagram SD-489 for treatment of white water in paper mills shows the flow responsive water meter which controls the stroking rate of two Treet-O-Unit chemical pumps handling hypochlorite solution or bleach liquor, and aqua-ammonia or a solution of ammonium sulphate respectively.

Each pump is equipped with a micrometer adjustment which permits accurate regulation of the chlorine-ammonia ratio with respect to the untreated water coming from the booster pump. SD-531 is a flow diagram of the system and in the upper right hand corner of this diagram are shown the feeds to four paper machines.

The operation of the new method is briefly described as follows:

Untreated water under pressure, for the general supply passes through the control meter and piping to the reaction header where a predetermined amount of bleach liquor and aqua ammonia respectively are injected by the Treet-O-Unit chemical pumps. The chloramine solution thus formed is then piped to the points of application where the individual feeds are controlled by hard rubber cocks and rotameters.

By maintaining a constant pressure on the rotameter manifold the feeding rate at any point or points can be changed without affecting the feeding rates at other points. This is accomplished by the use of the pressure regulator connected to the water line on the down stream side of the Treet-O-Control meter. When the rate is increased at the injection points, the pressure in the system tends to drop, the pressure regulating valve opens and allows a higher rate of supply water to flow through the meter, thus maintaining the pressure and the feed through the individual rotameters.

As the Treet-O-Control meter speeds up or slows down in order to keep pace with the requirements of the distribution system the Treet-O-Unit chemical pumps follow the rotative speed of the meter spindle exactly, injecting the chemicals in proportion to each other and to the rate of flow.

Details of %Proportioneers, Inc.% Treet-O-Control meter and Treet-O-Unit chemical pumps may be obtained by writing %Proportioneers, Inc.%, Providence, R. I.

Obituary

Harold F. Kelley

Harold F. Kelley, treasurer and manager of the Kelley Paper Corporation, Bellows Falls, Vt., died on January 23 following an appendix operation, at the age of 31.

Mr. Kelley was born in Cincinnati, Ohio. He attended Bellows Falls High School, was graduated from Vermont Academy in Saxtons River in 1925 and from Norwich University in 1930. After a summer-school course at the University of Maine he took the position of assistant superintendent at the Kelley Paper Corporation in the fall of 1930. For a short time he was employed at the Howe Scale company in Rutland. Following the death of his father, Herbert T. Kelley, in January, 1935, he took the position of treasurer and general manager at the Kelley Paper Corporation which he held at the time of his death.

Surviving are his wife, a son, Herbert Clayton, 4, and a daughter, Katharine Ann, 16 months; two sisters, two brothers, his mother and grandmother.

At Norwich Mr. Kelley joined the national fraternity, Phi Kappa Delta; he was a member of King Solomon's Temple Lodge, F. & A. M., the Abenaqui Chapter and Holy Cross Commandery of the Masonic Order, and a member of the Bellows Falls Lodge of Elks. He was a member of the Reserve Officers' Training Corps on the inactive list. During the past year he had acquired an airplane pilot's permit, permitting flying within 25 miles of the airport base, and in the near future had expected to obtain a regular pilot's license.

Funeral services were held at the United Church and burial was in Oak Hill Cemetery at Bellows Falls.

E. Ellsworth Lincoln

DIGHTON, Mass., February 10, 1941—E. Ellsworth Lincoln, 79, descendant of the first colonial paper maker and former state representative, died at his residence, 203 Lincoln avenue, North Dighton, February 4. He collapsed while working in the paper mill of the Dighton Manufacturing Company, which he superintended and partly owned for 50 years, and died an hour later.

Mr. Lincoln, 20 years a selectman of Dighton, was elected as sixth Bristol district representative in 1914 for one term. He was a descendant of Lorenzo Lincoln, inheritor of the Westville Paper mill business of John West, first paper mill owner of colonial days.

He leaves a brother and sister, Henry C. L. Lincoln and Mrs. Annie L. Bridgeford. Funeral services were held February 7 at his home.

William E. Ramage

William E. Ramage, 78, prominent papermaker, died today at his home on the Bernardston Road, Greenfield, Mass., following a short illness. Born in Paterson, N. J., son of William and Jessie (Chalmers) Ramage, he lived for some time in Holyoke and later in Dalton, where he married Elizabeth Champion. He was employed there by the Byron Weston Paper Company for many years.

He left there to go to Stevens Point, Wis., where he was employed by the Plover Paper Company and later moved to Adams to be superintendent of the Berkshire Hills Paper Co. While there he perfected a patent for loose leaf ledger paper.

In 1909 he moved to Turners Falls to become superintendent of the Keith Paper Company. He was later associated with the Esleeck Manufacturing Company. He retired in April, 1932, and moved to this town to make his home. He was a descendant of a long line of papermakers from Scotland.

He was a member of Mechanic Lodge of Masons, Turners Falls, and the Ancient Order of United Workmen. Besides his wife, he leaves two daughters, Jessie C. and Elizabeth E., both of Greenfield. Funeral services were held Tuesday at the home and committal services took place at Green River Cemetery Chapel.

George D. Woodworth

Funeral services for George D. Woodworth, 66, Arlington Heights, Mass., formerly manager for the A. P. W. Paper Company, Inc., were held Saturday afternoon, February 1, in the Saville and Kimball Chapel, Arlington.

Born in Watertown, N. Y., on August 23, 1874, the son of George I. and Laura A. Woodworth, he was in the automobile business in Philadelphia and Washington early in his business career. For about 30 years, until he retired 11 years ago, he was connected with the A. P. W. Paper Company, first in New York and then in Boston.

He was a member and former champion of the Franklin Country Club, a member of the Lexington Golf Club and of the Middlesex Sportsman's Association in Arlington.

He leaves his wife, Mrs. Grace (Palmer) Woodworth, and a son, Palmer Woodworth, who is in the United States Marines, stationed at Paris Island, S. C.

Cremation was at Mount Auburn Cemetery, Cambridge, Mass.

Hugo Heller, Sr.

MILWAUKEE, Wis., February 10, 1941 — Hugo Heller, Sr., one of the founders of Milprint, Inc., died Friday, January 31, at his home in Chicago, Ill. His death occurred unexpectedly, since he had recovered from a recent illness and had resumed his duties in the company's sales office in Chicago, where he had served for the last ten years. He had lived in Milwaukee for the 47 years previous.

In 1900 Mr. Heller and his brothers, Max T. Heller, president of the company, and William Heller, vice-president, founded the concern, one of the largest in the business in the specialty wrapper field for multicolor printing. He was born in Dresden, Germany.

Funeral services were held Monday, February 3, at Skookie, Ill., and burial was made in Chicago Mr. Heller is survived by his widow and one son, Hugo, Jr., his brothers and three sisters.

Raymond N. Hamilton

MILWAUKEE, Wis., February 10, 1941—Raymond N. Hamilton, 51, vice-president of the Milwaukee Lace Paper Company, died Wednesday, February 5, at St. Joseph's hospital after an illness of about three weeks.

Mr. Hamilton was a son of C. W. Hamilton.

founder of the company, and had been associated with his father in the business for the last thirty years. His brother Kenneth is secretary of the company. Survivors include his widow, a son, Raymond, Jr., a daughter, Eleanor, his brother and his parents, Mr. and Mrs. C. W. Hamilton.

Burial was at Milwaukee.

William A. Hokenson

MARINETTE, Wis., February 10, 1941 — William A. Hokenson, 60, formerly chief engineer at the Southern Kraft Corporation mill here, died February 6 at his home. He had been ill for about two years.

Mr. Hokenson was employed at the mill for twelve years, but retired in 1937 due to failing health. He was a native of Sweden and came to the United States in 1901. He had resided at Marinette for the last 19 years.

Funeral services were conducted Saturday, February 8, at Zion Lutheran Church, and burial was made in Forest Home cemetery.

Harold D. Griffiths

Harold D. Griffiths, who has been connected with the West Virginia Pulp and Paper Company for the past 32 years, and who served the company in several departments, but for the past 25 years as a sales representative, died on January 28, in the Mount Vernon Hospital, Mount Vernon, N. Y. Mr. Griffiths was taken ill the last of December with phlebitis and while in the hospital, developed pleuro-pneumonia but had practically recovered from the pneumonia and was progressing satisfactorily until Saturday, January 25, when a turn for the worse was taken and death resulted from the phlebitis infection. Mr. Griffiths was in his 49th year.

Percy Sandwell

[FROM OUR REGULAR CORRESPONDENT]

VANCOUVER, B. C., January 27, 1941—Officials of the Powell River Company, Ltd., at Powell River, B. C., have received a cable from Tasmania informing them of the death there of Percy Sandwell, Vancouver man, who for many years was resident engineer and later assistant resident manager for the company at Powell River. Mr. Sandwell left British Columbia about three years ago to plan and supervise construction of a great newsprint plant near Hobart, Tasmania. He was still connected with the plant at his death. His son, Percy R. Sandwell, who graduated in applied science at University of British Columbia in 1935, is resident engineer there. Besides his son, Mr. Sandwell leaves a wife and a daughter in Tasmania.

Scott Paper Co. Changes

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., February 10, 1941—W. R. Draper, divisional sales manager for the Scott Paper Company in New England, has gone to New York as assistant regional sales manager. In the new New England retail set-up, in three districts, B. C. Shaffer, the New Haven block manager, has come to Boston as Boston district supervisor; T. W. Prescott, formerly Boston block manager, is now the Hartford district supervisor; T. Y. Watson, formerly Providence block manager, is now the Providence district supervisor.

Coated and Glazed Paper Census

Manufacturers of coated and glazed paper reported slightly increased activities in 1939 as compared with 1937, according to preliminary figures compiled from returns of the Census of Manufactures for 1939 released by Director William Lane Austin, Bureau of the Census, Department of Commerce.

This industry, as constituted for census purposes, embraces establishments primarily engaged in the manufacture of coated-book, waxed, and gummed paper (including gummed labels and paper and cloth tape), and other coated and glazed paper made from purchased stock. Water-proofed wrapping paper, fly paper, and cloth-lined paper are also classified in this industry.

The 1939 Census of Manufactures is the first census for which employees of coated and glazed paper plants who were primarily engaged in distribution, construction, etc., activities have been called for separately on the schedules. It is not known how many of the wage earners reported for 1937 were engaged in distribution and construction and how many were engaged in manufacturing. Employees of the plants reported as engaged in distribution and construction activities in 1939 are not included in this preliminary report but will be included in the final report.

The wage earners primarily engaged in manufacturing in this industry in 1939 numbered 7,449, an increase of 2.9 per cent compared with 7,240 reported for 1937, and their wages, $9,384,260, exceeded the 1937 figure, $8,614,339, by 8.9 per cent.

The value of products for this industry for 1939 amounted to $84,386,593, an increase of 7.5 per cent as compared with $78,522,258 reported for 1937.

Summary statistics for the industry for 1939 and 1937 are given in the following table. Detailed statistics on production will be presented in a later report. All figures for 1939 are preliminary and subject to revision.

SUMMARY FOR THE INDUSTRY: 1939 AND 1937

(Because they account for a negligible portion of the national output, plants with annual production valued at less than $5,000 have been excluded since 1919)

	1939	1937	Per cent of increase or decrease (—)
Number of establishments	140	103	35.9
Salaries personnel [1]	1,241	1,474	—15.8
Salaries [1, 2]	$3,701,443	$3,841,864	— 3.7
Wage earners (average for the year) [3]	7,449	7,240	2.9
Wages [2, 3]	$9,384,260	$8,614,339	8.9
Cost of materials, supplies, fuel, purchased electric energy, and contract work [2]	$53,627,595	$51,950,312	3.2
Value of products [2]	$84,386,593	$78,522,258	7.5
Value added by manufacture [4]	$30,758,998	$26,571,946	15.8

[1] No data for employees of central administrative offices are included.

[2] Profits or losses cannot be calculated from the census figures because no data are collected for certain expense items, such as interest, rent, depreciation, taxes, insurance, and advertising.

[3] The item for wage earners is an average of the numbers reported for the several months of the year and includes both full-time and part-time workers. The quotient obtained by dividing the amount of wages by the average number of wage earners should not, therefore, be accepted as representing the average wage received by full-time wage earners.

[4] Value of products less cost of materials, supplies, fuel, purchased electric energy, and contract work.

Perry W. Lesh Honored

INDIANAPOLIS, Ind., February 3, 1940—Perry W. Lesh, head of the Lesh Paper Company here, has been elected to the board of directors of the James Whitcomb Riley Memorial Association, which has supervision of the operation of the James Whitcomb Riley hospital for children here.

Hear Minimum Wage Witnesses

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 12, 1941—Sixteen witnesses appeared in support of the minimum wage recommendations of 36, 38 and 40 cents an hour for the Converted Paper Products Industry at the public hearing conducted by the Wage and Hour Division. Seven witnesses appeared in opposition to the minimum wage recommendations.

Highlights of the testimony at the public hearing centered around the definition of the Converted Paper Products industry and classifications within the industry. Urging that the definition be interpreted to include calendars, and supporting the recommendations of the Committee, John B. Haggerty, president of the International Brotherhood of Bookbinders was joined by an employer representative, Thomas V. Sullivan, attorney for Brown & Bigelow, Chicago, Ill., one of the largest calendar manufacturing concerns in the country.

Another part of the definition of the industry that came in for attention was the inclusion of paper toy products. These products are included in the industry as defined. Sam Sandberg, Vice-President of the United Paper Novelty and Toy Workers International Union, Clinton, Massachusetts, defended the inclusion of paper toy products within the definition of the industry, in opposition to James L. Fri, Managing Director of the Toy Manufacturers of the U. S. A., Inc., New York, who argued against such inclusion.

Testimony regarding classifications within the industry was primarily centered around folding paper boxes and set-up boxes. William R. Kreeger, Secretary and W. C. Moore, representing the National Paper Box Manufacturers Association, Philadelphia, Pa., supported the recommendations for a 36-cent minimum for the set-up boxes, while A. E. Murphy representing the Folding Paper Box Association of America, Chicago, although appearing in opposition to the committee's recommendation, testified in support of a 40-cent minimum for both folding paper boxes and set-up boxes.

Henry T. Hunt, principal hearings examiner for the division, opened the hearing and presided. Kenneth Meiklejohn representing the solicitor's office offered a group of exhibits relating to the deliberations and action of the converted paper products industry committee. Witnesses for the Administrator, General Philip B. Fleming, included: H. E. Riley, bureau of labor statistics; Joseph Shaw, senior industry committee advisor, wage and hour division; Theodore Reedy, economist, research and statistics branch, wage and hour division; and Alice Hanson, assistant chief, cost of living section, Bureau of Labor Statistics.

Supporting the minimum wage recommendations of the committee, the following witnesses appeared: Harry M. Levy, Pak-It-Rite Paper Box Company, Inc., Brooklyn, N. Y.; J. H. Patterson, general manager, F. N. Burt Company, Inc., Buffalo, N. Y.; George E. Haw, secretary, the Randolph Paper Box Company, Richmond, Virginia; Fred R. Zur-Schmiede, President, the Finger Paper Box Company, Inc., Louisville, Kentucky; A. N. Weinberg, Paper Box Makers Union, Local 299, International Brotherhood of Pulp Sulphite and Paper Mill Workers, New York; Samuel E. Hill, research assistant to the American Federation of Labor, Washington, D. C.; Walter P. Miller, Jr., president, Walter P. Miller Company, Inc., Philadelphia, Pa.; Paul S. Hanway, executive secretary, National Fibre Gas and Tube Association, New York; Charles Bridgewater, president, United Bag Workers and Allied Trades Union, Local No. 35, Philadelphia, Pa.; Murray Maxwell, Business Agent, Sample Book & Allied Workers Local 57, Philadelphia, Pa.; and Frank Grasso, CIO.

Opposition to the committee's recommendations was expressed in testimony of the following witnesses: Richard S. Wechsler, Esquire, Lily-Tulip Cup Corporation, New York; Norvin H. Rieser, President, the Rieser Company, Inc., New York; and G. Edgar Mooney, Mooney & Mooney, Inc., Newark, N. J.

Vertical Type Unit Heaters

Vertical projection type unit heaters are announced by D. J. Murray Manufacturing Company, Wausau, Wis., under the trade name "M Series Murco." These are an addition to the line of unit heaters previously manufactured. The M Series "Murco" vertical projection type unit heaters illustrated here are made with the heating element all - copper and bronze, with a few brazed joints. The copper fins are metallicaly bonded to the copper tubes, an effective permanent bond that maintains contact even at high temperatures. Some of the uses for vertical projection type unit heaters are in blanking of cold drafts in front of doorways, market buildings, offices, public buildings and industrial plants, warehouses, garages with high ceilings or any building that has a wide area to be heated. M Series "Murco" vertical projection type unit heaters are made in 11 models to meet various requirements.

Royal Lace Paper Signs Stipulation

WASHINGTON, D. C., January 29, 1941—National Labor Relations Board has announced a stipulation in full settlement of its order of October 10, 1940, issued against the Royal Lace Paper Works, Incorporated, Brooklyn, N. Y.

Under the terms of the stipulation the company agrees to withdraw all recognition from and disestablish the Collective Bargaining Committee and to cease giving effect to its contract with the Committee.

The company is also ordered to cease and desist from interfering in any manner with the right of its employees to self-organization.

The company is required to post copies of the Board's order for at least 60 days and, within 10 days, notify the Board's Regional Director at New York City of the compliance action taken.

On May 17, 1940, the Board issued its complaint based upon charges filed by Federal Labor Union No. 21863, (AFL). A public hearing was held in New York on June 3-7, 1940. On October 10 the Board's decision and order was issued.

New TAPPI Members

The executive committee of the Technical Association of the Pulp and Paper Industry has elected the following to membership:

Laurence R. Adkins, chemist, Pond's Extract Company, Seymour, Conn., who is a 1934 graduate of the University of Maine and was formerly with Robert Gair Company, Inc., Piermont, N. Y.

Robert P. Anderson, student, New York State College of Forestry, Syracuse, N. Y.

Raymond F. Bennett, general superintendent, Ecusta Paper Corporation, Pisgah Forest, N. C., was formerly with National Cash Register Co., Dayton, Ohio, Crystal Tissue Company, Middletown, Ohio, and Fox Paper Co., Lockland, Ohio.

Kenneth G. Chesley, research chemist, Crossett Paper Mills, Crossett, Ark., who is a 1930 graduate (A.B.) of the University of Kansas and a 1932 graduate (M.S.) of Lehigh University and was formerly research fellow with the Lehigh Institute of Research.

William H. de Montmorency, chief chemist, Gair Company Canada, Ltd., Toronto, Ont., who is a graduate of the University of Toronto and was formerly with the university as a demonstrator in chemical engineering.

John W. Gilkey, assistant chemist, Bryant Paper Company, Kalamazoo, Mich., who is a 1939 graduate of Antioch College and was formerly with the Hewitt Soap Company, Dayton, Ohio, and the Michigan Paper Company, Plainwell, Mich.

Laurence J. Harlow, student, University of Maine, Orono, Maine.

John F. Hechtman, student, Institute of Paper Chemistry, Appleton, Wis.

Thomas A. Johnston, chemist-bacteriologist, North Carolina Pulp Co., Plymouth, N. C., who is a 1939 graduate of the University of Alabama.

Patrick J. Kennedy, Jr., consulting engineer, Holyoke, Mass., who is a 1906 graduate of Massachusetts Institute of Technology and was formerly with the Holbrook, Cabot, Rollins Co., New York, N. Y.

George DeW. Knight, graduate student, Institute of Paper Chemistry, Appleton, Wis., who is a 1939 graduate of Alabama Polytechnic Institute.

Oren A. Mason, chief chemist, Port Royal Pulp and Paper Company, Ltd., St. John, N. B., who is a 1934 graduate of Mount Allison College and was formerly with Canada Veneers, Ltd., St. John, N. B., and Restigouche Company, Campbellton, N. C.

Frederic H. Peabody, vice president in charge of sales, Union Screen Plate Company, Fitchburg, Mass.

Arthur H. Rand, chemist, Fraser Paper, Ltd., Madawaska, Maine, who is a 1939 graduate of Worcester Polytechnic Institute.

Dudley H. Smith, control chemist, Hollingsworth & Whitney Company, Waterville, Maine, who is a 1934 graduate of Wesleyan University and was formerly with Thomas Keery Company, Hancock, N. Y.

Lester M. Start, vice president, Rice Barton Corporation, Worcester, Mass., who attended Drexel Institute and was formerly with Pusey and Jones Corporation, Wilmington, Del.

Fritz L. Straus, chief chemist, Ecusta Paper Corporation, Pisgah Forest, N. C., who is a 1901 graduate of the University of Munich (Germany) and was formerly professor of organic chemistry at the Universities of Strassbourg, Berlin and Breslau.

Roland Wilber, pulp mill superintendent, Ecusta Paper Corp., Pisgah Forest, N. C., attended West Virginia University and was formerly with the Cherry River Paper Company, Richwood, West Virginia.

Reinold T. Woodford, chemist, Arkell & Smiths, Canajoharie, N. Y., who is a 1930 graduate of the University of Minnesota and was formerly with Rapin Wax Paper Company, Minneapolis, Minn., Dodge Chemical Company, Chicago, Ill., and Milprint, Inc., Milwaukee, Wis.

Peterson to Address TAPPI

Paul Kronacher, member of the Belgian Senate, who was originally announced as the TAPPI luncheon speaker for February 20, has left the United States on a diplomatic mission and will be replaced by Elmer W. Peterson, who has just returned from his post as Chief of the Bureau for the Associated Press in Stockholm, Sweden.

Mr. Peterson, a native of Minneapolis, will talk on "The Viking's Return" in which he will tell the story about what is going on behind the cloak of censorship in Northern Europe, particularly in regard to great industries.

Mr. Peterson has represented the Associated Press at nearly all of the great world military events since 1931. From 1931-1935 he studied, at first hand, the social events and conditions that led to war in Europe. In 1936-7 he viewed the Civil War in Spain. In 1938 he was with the Japanese in China and was the first American correspondent to visit the Japanese Army in action. In 1939 he was Chief of the Bureau in Warsaw and covered Germany's invasion of Poland, travelled extensively in the Balkans and witnessed the riots in Palestine. In 1940 he was Chief of the Bureau in Southwestern Europe and in the Scandinavian countries and covered the invasion of Finland and of Denmark and Norway.

Mr. Peterson is an interesting and forceful speaker who will give reliable first hand information about what is really happening in Europe. Articles by Mr. Peterson about Norway will appear shortly in *Collier's Weekly*.

Swedish Wood Pulp Journal Special

The annual issue of the *Swedish Timber and Woodpulp Journal* 1940 has just appeared with 160 pages. It contains a great many interesting articles in both the Swedish and English languages. The annual numbers of the Journal are intended to give a survey of the preceding year from commercial and technical points of view and thus to have the character of a year book, reviewing productions, export and markets for the various products of the Northern timber, pulp and paper industries.

In the issue of 1940 the technical development in the pulp and paper industries of the Scandinavian countries is dealt with in a very complete way. Technical questions and news are also dealt with in a number of special articles. Of a more general nature are a description of the timber industries of Bozholm, the Holmsund new sawmill, the paper bag industry of Europe, the drying of sawn timber and the consumption of paper in Sweden.

The annual issue can be ordered from the A/B Svensk Trävaru-Tidning, Kungsgatan 17, Stockholm, Sweden. The price is 3/6 sh postage included.

New England Paper Men Meet

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., February 10, 1941—Charles A. Esty, of Carter, Rice & Co., Corp., was elected president of the New England Paper Merchants Association at the annual meeting held February 6 at the Parker House. Other officers elected were as follows: First vice president, in charge of the Wrapping Paper Division, Harry J. Dowd, of H. J. Dowd Company, Inc., Cambridge, Mass.; second vice-president, in charge of the Fine Paper Division, Leon M. Poore, John Carter & Co., Inc.; treasurer, Frank B. Cummings; secretary, Walter R. Guild. Board of directors, F. Bendel Tracy, Fort Hill Paper Company; John F. Blackman, D. F. Munroe Company; John H. Brewer, Storrs & Bement Company; J. Frank Halloran, the Century Paper Company; Robert M. Stone, Stone & Forsyth Company; William H. Walpole, Rutter & McNaught, Inc.; Samuel L. Ginsburg, Ginsburg Brothers, Inc., Somerville, Mass.; James C. Campbell, Industrial Paper and Cordage Company, Pawtucket, R. I., representing Rhode Island and Southern Massachusetts; Sterling R. Chatfield, Minot E. Chatfield Company, New Haven, representing Connecticut; John R. Whitney, Whitney-Anderson Paper Company, Springfield, Mass., representing Western Massachusetts; Harold R. Robinson, C. H. Robinson Company, Portland, representing Maine, New Hampshire and Vermont.

WALTER R. GUILD

The retiring president, John F. Blackman, of D. F. Munroe Co., presided.

Members rose while names of those who had died during the year were read: Edw. H. Stone, Herbert W. Robbins, and William W. Jenks.

Mr. Esty and Mr. Dowd made brief acceptances of their election.

John H. Brewer, vice-president of the National Paper Trade Association, gave a preview of the outstanding features of the coming New York convention.

Walter R. Guild, the new secretary, was introduced.

The guest speaker, Theodore Smith, assistant professor of English and history at Massachusetts Institute of Technology, discussed "The Meaning of the Present Crisis."

Stimpson Incorporates

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., February 10, 1941—The new company, Stimpson, Incorporated, which acquired on December 10, 1940, through the De Forest Company, the business, trade name and good will of Stimpson & Co., Inc., report that business is making headway with an increasing volume of satisfactory orders since it announced operations on December 11, 1940.

Under the control and ownership of Samuel D. De Forest, president and treasurer, the concern is building up a well rounded inventory of basic lines of papers, paper specialties and twines.

With previous long manufacturing experience, Mr. De Forest has a wide and special knowledge concerning particular papers for technical and manufacturing uses and is planning to add agency representation on mill lines. He plans to develop the business according to his own idea acquired during the course of his manufacturing experience.

He started in the paper business in 1907 as a boy, with Hollingsworth & Whitney Company at Boston, working as a clerk in the office of Charles A. Dean, then president of that company.

He developed in the purchasing and administrative side of the business, subsequently in the manufacturing department, and in recent years held the position of manager of manufacturing and as a director of the company was assistant to its president, Mr. M. L. Madden. He resigned from the Hollingsworth & Whitney Company in October, 1940.

Associated with Mr. De Forest as assistant treasurer is his son, Stuart S. De Forest, a recent graduate of Harvard College, who majored in economics, business and finance, and has had some paper mill experience. Most of the personnel of the former firm of Stimpson & Co., Inc., are associated with the new company.

In the event of Mr. De Forest's absence, his son would take over his duties.

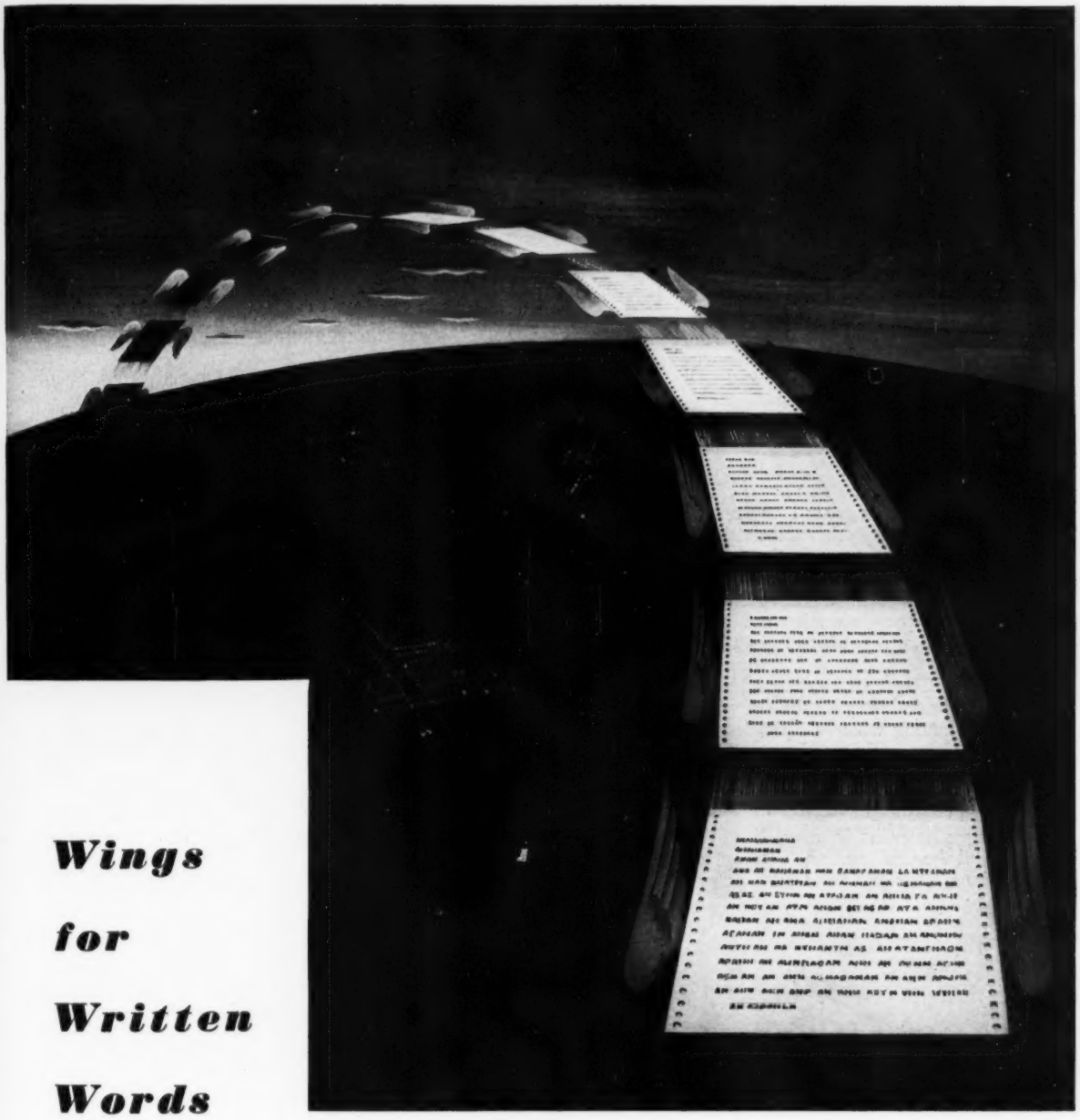
In the course of his manufacturing career, Mr. De Forest travelled over the United States and Canada, as well as Scandinavian countries, England and Scotland, visiting plants of the industry and studying the manufacture of pulp and paper.

His present position in the industry is not his final goal. Imbued with manufacturing processes and management and gifted with farsightedness, Mr. De Forest believes that there are immense possibilities and future developments coming in the South. His interest in that part of the country as a favorable location for paper manufacturing is exemplified in the new Chickasaw Mills of Hollingsworth & Whitney Company in Mobile, Ala. Mr. De Forest spent considerable time in locating a proper site for this company in the South, carried on negotiations for and directed the construction of the Chickasaw Mills and facilities.

Marvellum Mails New Sample Books

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., February 10, 1941—Henry L. Goodman, distributor for the Marvellum Company, Holyoke, Mass., has just been mailing three new books of papers: Book 046N, Cretonne; Book 022, Minuet Cretonne and the recently developed Velmar Papers; Book 078, Water-Repellent Plus Soil-Resisting and Non-Scuffing.



Wings for Written Words

On swift electric wings, Bell System Teletypewriter Service flashes business messages *instantly*, any distance.

Accuracy is assured, because the teletype "puts it in writing"— transmits every word exchanged in typewritten form. Carbons in the sending and receiving machines provide routing and filing copies at every point of contact. Error is minimized.

All types of businesses use the teletype . . . to co-ordinate scattered units . . . rush orders to distant plants . . . speed up customer service. You may already have benefited by its efficiencies. Yet increased usage, or more strategic application of your present teletypewriter service, might yield still further economies. A Bell System representative will help analyze your existing set-up. Call him through your local telephone office.

BELL SYSTEM TELETYPEWRITER SERVICE

February 13, 1941

Paprex Co. Organizes

Combining the research and engineering services of the Albert L. Clapp Laboratories with the engineering and manufacturing services of Arthur B. Green, the Paprex Company recently incorporated under the laws of Massachusetts, with offices, laboratory and plant located in the Heywood-Wakefield Buildings, 24 Water street, Wakefield, Mass.

Both Mr. Clapp and Mr. Green continue to be available as heretofore for consulting work on the manufacture of paper and paperboard and on the control of manufacturing processes. Paprex Company continues the manufacture and distribution of the Standard Laboratory Slowness Tester, Standard Laboratory Sheet Mould and Automatic Slowness Tester as heretofore carried on by Arthur B. Green at Needham, Mass.

By uniting the interests of these two men, it is the purpose of Paprex Company to provide a comprehensive and unique consulting service which embraces both the chemical and the mechanical aspects of the practical operating problems of the mill. Paprex Company maintains a well equipped laboratory for research and test, together with a display room showing modern developments in the line of precision control. Paprex Company operates a plant making in continuous web form a line of specialties developed from the company's researches, and licenses other companies who manufacture under Paprex Company's patents.

Albert L. Clapp, of Danvers, Mass., has long been known in the industry as the originator of important processes, among which are the modern utilization of wax emulsions in sizing, the employment of asbestos fibers along with fibers of vegetable origin, the modern standard leatherboard material for heel-lifts and counters in the manufacture of shoes, modern pulp moulding, numerous impregnations of pulps and of sheets and the processes for accomplishing them, fiber dispersions, fiber pretreatments, and many others.

Arthur B. Green, of Needham, Mass., is the originator of precision methods of furnishing and running batch beaters, precision methods of refining, the means of bringing stocks to the paper machine with precise strengths and paper making qualities, self-recording devices showing the exact condition of stock at various steps in its preparation, precision stock density control, instruments for the study and analysis of paper making stocks, and other developments.

Hampshire Paper Co. to Move

Holyoke has acquired an additional industry, it was made known recently with the announcement that the Hampshire Paper Company would lease the entire second floor of the American Thread Company's finishing plant. There are 17,000 square feet of floor space involved.

The Hampshire Paper Company has been devoting itself entirely to papeteries and the plant formerly owned by it now is operated by the Stevens Paper Mills, Inc., and the latter company is taking over the space formerly operated by Hampshire for necessary storage quarters.

The change will be made about May 1 and will terminate the association of the 75-year-old Hampshire Paper Company in the town of South Hadley. Constant Southworth, president, confirmed the announcement of the change proposed.

S. J. Newcomer to be Manager of Sales

MONROE, Mich., February 4, 1941—The Consolidated Paper Company, manufacturer of corrugated and solid fiber shipping containers, folding box board, binders board and folding paper boxes, with plants at Aurora, Ill., River Rouge, Mich. and Monroe, Mich., announces that Stanley J. Newcomer has just been appointed to the position of manager of all

STANLEY J. NEWCOMER

sales. Mr. Newcomer is a vice president of the Consolidated Paper Company, formerly in charge of the board division and his new title is vice president and general manager of sales.

Delaware Discusses Personnel Relations

The Delaware Valley Section of the Technical Association of the Pulp and Paper Industry met at the Engineers Club, Philadelphia, Pa., on Friday evening, February 7. Dale Purves, treasurer and operating manager of the Stetson Hat Company, Philadelphia, talked on Personnel Relations.

Pertinent changes in management's dealings with labor from 1929 to the present time were taken up. More specific information was given in connection with the Stetson Hat Company. Labor policies have been formulated by the foremen themselves and they have worked out very satisfactorily. Following the talk there was an interesting discussion on general labor policies, the Wagner Act, closed shop, unions, etc.

Sixty-five attended the meeting. Among those present were: Edw. J. Albert, John Aracadam, Earl F. Anderton, W. T. Aldinger, J. R. Atwater, Paul C. Baldwin, R. M. Bates, Alan R. Boyd, S. G. Briscoe, W. E. Brow, J. M. Chesnutt, C. M. Connor, A. Morton Cooper, R. H. Dillinger, Paul R. Dugan, Paul Easton, Jacob Edge, H. J. Farra, Jr., George A. Farrah, J. D. Gercke, J. F. Good, Lois V. Hans, A. M. Hartley, Harry Hulmes, Thos. A. D. Jackson, Leslie Justice, N. J. Koehler, Willard H. Lapp, Geo. B. Martin, M. Craig Maxwell, F. J. McAndrews, Alex. McInnes, Jr., Lewis B. Miller, Walter B. Morehouse, Henry F. Plate, E. N. Poor, Dale Purves, Glen T. Renegar, C. W. Rivise, Wm. C. Robinson, Edw. A. Shallcross, A. Shrabel, Henry C. Speel, Elliot I. Stokes, Howard H. Street, W. B. Vincent, and A. E. Waugh.

To Speak at N.P.T.A. Convention

The announcement has just been issued by the office of The National Paper Trade Association that Mr. Arthur H. (Red) Motley, Vice-President of Crowell-Collier Publishing Company, will be the guest speaker at the open session of the Wrapping Paper Division, Wednesday morning, February 19. Mr. Motley will speak on the topic of "Selling."

As one of the best known and most successful executives in the sales and advertising field, his ideas and advice to paper merchants should be stimulating and helpful in the highest degree. Those who have heard Mr. Motley consider him one of the most forceful and interesting speakers that they have ever heard in a business meeting and declare that the association is exceedingly fortunate in securing his acceptance of their invitation.

Potdevin Holds Annual Display

During "Paper Week," February 17 through 20, Potdevin Machine Company will hold its annual converting machine exhibit. The 20 various converting machines assembled in the Potdevin display hall consist of paper flour sack and bag machines, aniline and oil-ink, roll-to-roll and roll-to-sheet printing presses, waxing machinery, laminators, gluing and varnishing machines. Many of these units will be operated for visitors.

Several other types of equipment under construction will be available for inspection as well as hundreds of bag and printing samples, photographs and various supplementary bag and printing plant accessories. Potdevin Machine Company and display hall are located at 1223 38th street, Brooklyn, N. Y.

Government Paper Bids

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 12, 1941—Government Printing Office has received the following bids for 1,015 sheets of 17 x 22 artificial parchment paper; Crane & Company, $53.72 per M sheets; R. P. Andrews Paper Company, $53.72; and Barton, Duer & Koch Paper Company, $48.00.

For 1,064 pounds of 35 x 45 goldenrod coated book paper and 640 pounds same 38 x 50: Whitaker Paper Company, 11.9 cents; Mathers-Lamm Paper Company, 11.75 cents (all or none); R. P. Andrews Paper Company, 13.9 cents; Mudge Paper Company, 11.65 and 11.40 cents; and Stanford Paper Company, 14 cents (1st item only).

Reliance Electric Opens New Sales Office

Reliance Electric & Engineering Company, Cleveland, Ohio, is opening a sales office in Minneapolis, Minn., with Elwood H. Koontz as district manager, it is announced by James W. Corey, vice president in charge of sales. Mr. Koontz joined Reliance in 1936 directly following his graduation from the Massachusetts Institute of Technology. He goes to his new responsibilities in Minneapolis from Reliance's Philadelphia office where he has been a member of the sales engineering staff for the past three years.

Wilmer K. Schlotterbeck, in the application engineering department of Reliance in Cleveland, succeeds Mr. Koontz in Philadelphia.

New Sales Promotion Campaign

The National Paper Trade Association announces a new sales promotion campaign—"The Paper Trade Parade"—which will operate during the months of April and May. This campaign, unlike the recent one, has been developed for use exclusively by the association and its members and is directly applicable to the wholesale paper industry. The material for the campaign covers both wrapping and printing paper salesmen and due to that fact it is expected that many more salesmen will participate than did in the "Get Out The Votes" Campaign.

Each merchant will set up a quota or goal for his salesmen and will make awards accordingly to those men who are successful in attaining their quotas. In addition the National Association will award twenty-six grand prizes at the end of the campaign. The Middle States Wrapping Paper Association has announced two prizes of $25.00 and $15.00 each to augment the National awards, and it is expected that other local associations will cooperate accordingly.

One feature of the campaign will be awarding of a series of lapel buttons to the salesmen. When a man reaches one-third of his quota he will be given a button which reads, "Local Paper Trader". When he has reached two-thirds of his quota he will receive a button which reads, "State Paper Trader". When he has reached one hundred per cent of his quota he will be given a bronze button which reads "National Paper Trader." Only "National Paper Traders" will be qualified to participate in the National awards.

There will be nine mailings during the campaign. The first mailing will reach the salesmen on March 31.

The National awards will be based on the best letters received from the salesmen who will be asked to write on any one of 15 suggested topics. At a later date a committee will be appointed to judge these letters.

F. S. Weymyss, Jr. is Called to Duty

F. S. Weymyss, Jr., sales manager of the W. H. Loomis Talc Corporation, of Gouverneur, N. Y., has been called to active duty with the Field Artillery of the U. S. Army for one year starting February 6. He expects to be stationed at Fort Bragg, N. C. Mr. Weymyss is a 1st Lieutenant in the Reserves having taken an R.O.T.C. course while at Princeton University.

Beach & Arthur Add Equipment

The Beach & Arthur Paper Company, Paperville, Pa., with sales office at 17 East 42nd street, New York, will install and have in operation in April the latest sheeting and trimming equipment.

The equipment includes a Seybold precision automatic spacer paper cutter, and a Hamblet sheet cutter.

J. H. Brewer Appointed Captain

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., February 3, 1941—John H. Brewer, general manager of Storrs & Bement Company, has been appointed captain of Company I, State Guard, Quincy, Mass.

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending February 11, 1941

	High	Low	Last
A. P. W.	....	....	....
Armstrong Cork Co.	30½	30	30
Celotex Corp.	9	8⅝	8¾
Celotex Corp., pf.	71	68	68
Certain-Teed Products Corp.	4⅜	4⅛	4⅛
Certain-Teed Products Corp., pf.	32¼	30¾	31
Champion Paper & Fibre Co.	18⅞	18¾	18¾
Champion Paper & Fibre Co., pf.	106½	105	106½
Congoleum-Nairn Co.	18½	17½	18⅛
Container Corp. of America	14¾	14	14
Continental-Diamond Fibre Co.	8¼	7⅞	8
Crown-Zellerbach Co.	14	13½	13⅝
Crown-Zellerbach Co., pf.	90⅜	89½	90¼
Flintkote Co.	13⅞	13½	13½
Robert Gair	1⅞	1⅞	1⅞
Robert Gair, pf.	16¼	15½	15½
International Paper & Power	13⅜	12½	12½
International Paper & Power, pf.	62⅞	60⅜	60⅜
Johns-Manville Corp.	59	57½	57½
Jonhs-Manville Corp., pf.	128	128	128
Kimberly Clark Corp.	36	34½	34½
MacAndrews & Forbes	30	30	30
MacAndrews & Forbes, pf.	136	136	136
Masonite Corp.	26½	26¼	26¼
Mead Corp.	8¼	8⅛	8¼
Mead Corp., pf.	....	....	....
Paraffine Companies, Inc.	....	....	....
Paraffine Companies, Inc., pf.	103	102	103
Rayonier, Inc.	14	13½	13½
Rayonier, Inc., pf.	27½	27½	27½
Ruberoid Co.	....	....	....
Scott Paper Co.	35	34	35
Scott Paper Co., pf.	115	115	115
Sutherland Paper Co.	21¼	21¼	21¼
Union Bag & Paper Corp.	11⅝	10⅞	10⅞
United Paperboard Co.	3⅛	3⅛	3⅛
U. S. Gypsum Co.	65	64	64
U. S. Gypsum Co., pf.	176	176	176

New York Curb Exchange

High, Low and Last for Week Ending February 11, 1941

	High	Low	Last
American Box Board Co.	4½	4½	4½
Brown Co., pf.	....	....	....
Great Northern Paper	41⅜	41⅛	41⅛
Hummel-Ross Fibre Corp.	....	....	....
National Container Corp.	12	11⅝	11¾
St. Regis Paper Co.	2⅛	2⅛	2⅛
St. Regis Paper Co., pf.	....	....	....
Taggart Corp.	....	....	....

Donnacona Earnings Higher

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., February 10, 1941—The financial statement of the Donnacona Paper Company for the year ending December 31 last, just issued, shows substantially higher earnings, operating profit increasing $325,815 to $1,091,869 from $766,053 the previous year. This was equal to 3.27 times combined bond and note interest before depreciation and depletion as compared with 2.28 previously. After interest, depreciation, depletion and tax provision, net profit was $129,640, equal to 34.3c a share on the combined A and B stock, as compared with $8,985, equal to 2.3c per share on the same basis in 1939.

In his report to shareholders, president R. P. Kernan states that additional earnings for the year resulted from a larger volume of business and not from higher selling prices. "A board machine," he says, "with a capacity of 35 tons a day, has been added to the plant and is about to be put into operation. Other additions to the board mill have enabled your company to manufacture various new specialties, for which has been found a ready market. These additions are in line with the established policy of your company of diversifying its products in order that it shall not be entirely dependent upon the newsprint market."

Gair Stockholders to Meet

On January 22, 1941, the Court of Chancery of the State of Delaware, following a public hearing on January 21, 1941, approved the fairness of the terms and conditions of the issuance and exchange of securities as set forth in the plan for recapitalization of Robert Gair Company, Inc., dated December 17, 1940, and subsequently appointed Benjamin N. Brown, Esq. special master to call a meeting of the preferred stockholders to act upon the plan. The special master has called a meeting of the preferred stockholders to be held at Wilmington, Del. on February 28, 1941, at 9:00 A. M.

The directors of Robert Gair Company, Inc. have called a special meeting of all the stockholders of the company to be held at Wilmington, Del. on February 28, 1941, at 2:00 P. M. to act upon an amendment of the certificate of incorporation and certain other matters in connection with the consummation of the plan, when it has received the sanction of the chancellor.

Proxies have been mailed to all stockholders for both meetings. Preferred stockholders of record on the day preceding their meeting or any adjournment thereof will be entitled to vote at the preferred stockholders' meeting. All stockholders of record at the close of business on February 14, 1941 are entitled to vote at the special stockholders' meeting or any adjournment thereof.

Brompton Makes Good Report

MONREAL, Que., February 10, 1941—The report of the Brompton Pulp and Paper Company on last year's operations shows operating profit at $1,390,119 compared with $774,034 in the preceding year, resulting, after addition of investment income, premium on U. S. funds and profit on sale of investments in total income of $1,406,663, or nearly double total income in 1939 of $790,196. Working capital was increased $412,077 to a total of $2,831,728 while ratio of current assets to current liabilities was 5 to 1, and cash assets increased from $389,398 to a total of $1,117,804.

After provision for income taxes of $302,940, compared with $63,798 in the preceding year and provision for all other charges there remained net profit of $631,779, equal to $2.10 per share on 300,000 no par value shares outstanding, compared with $347,947, equal to $1.16 a share in 1939 and $119,232, equal to 40 cents a share in 1938.

President Arthur F. White in his report to shareholders says: "A vigorous demand from export markets for paper and board enabled your mills to be operated at capacity during the year. It is impossible to make any forecast for the year 1941."

St. Lawrence Earns $521,678

A report signed by A. K. Cameron, president, states that the total income of St. Lawrence Corpora-

tion, Ltd., in 1940 consisted of dividends received from Brompton Pulp & Paper Company amounting to $521,678 including a dividend receivable January 15, 1941. From this there was disbursed $516,474 to Class "A" preferred shares of St. Lawrence, in the form of dividends of $1.50 per share paid during 1940 and 25 cents per share payable January 15, 1941.

The item of investments in subsidiary companies stands at $15,664,406. This represents investments at cost, less amounts written off, in respect of the following holdings: 509,956 shares of St. Lawrence Paper Mills Company Limited no par value common; 298,107 shares of no par value common of Brompton Pulp & Paper Company Limited; and 24,811½ shares of no par value common of Lake St. John Power & Paper Company Limited—all of which are subsidiaries of St. Lawrence Corporation.

Lake St. John Profits Rise

The report of the Lake St. John Power and Paper Co., Ltd., shows operating profits for 1940, after depletion but before depreciation, interest and estimated taxes, at $1,213,717 as compared with $773,472 in 1939, and $582,121 in 1938, and well above the 1937 total of $1,000,984. Allowance for depreciation was increased from $286,204 in 1939 to $556,425, and there remained a balance of $657,292 equal to 2.13 times first mortgage bond interest, and equivalent to 1.36 times combined bond-debenture interest of $484,174, the latter payable on April 1, 1941. From the profits the company will pay on May 1 next the full dividend on its 6% non-cumulative preferred stock. For the preceding year company failed to earn depreciation requirements in full after fixed charges.

Hinde & Dauch Nets $1.52

The Hinde & Dauch Paper Company of Canada, Ltd. (Controlled by Hinde & Dauch Paper Company)—For 1940 reports a net profit of $456,851, equal to $1.52 a share on 299,933 shares of capital stock, compared with $298,209 or 99 cents a share in 1939. Dominion income provision for 1940 was $300,000 against $60,000 the year before.

Sylvania Earns $2.72

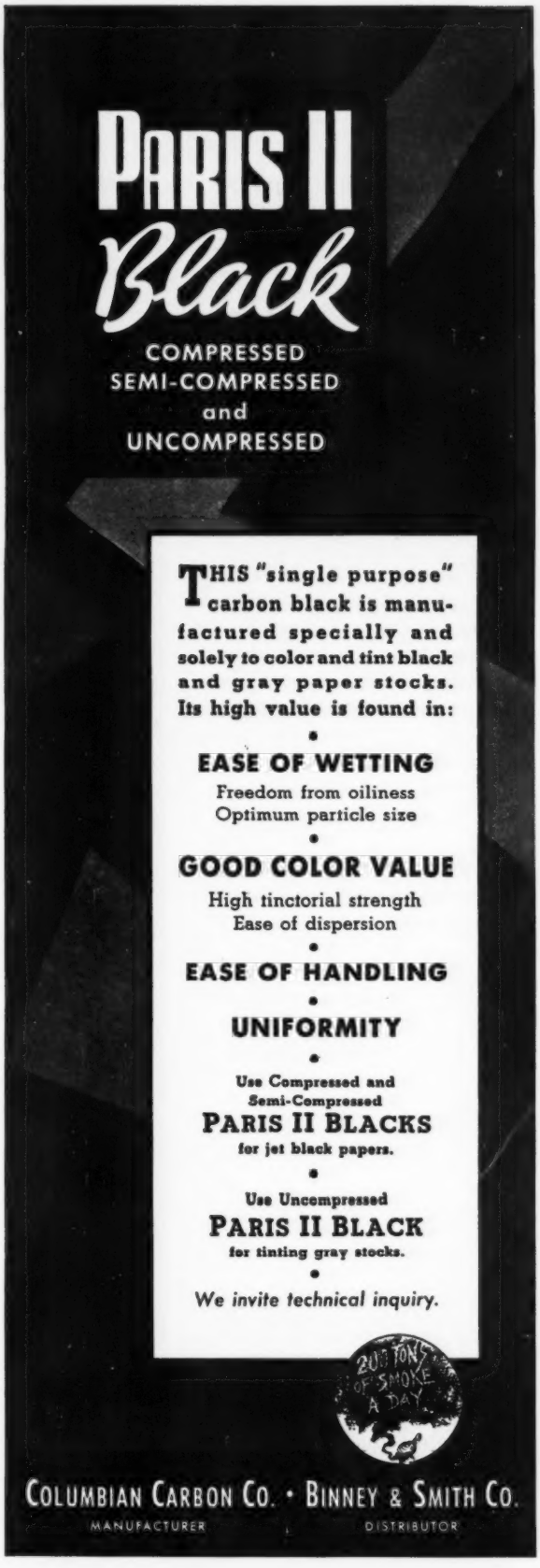
The Sylvania Industrial Corporation and subsidiaries, for the year ended December 31, reports a profit of $1,148,602 after taxes and charges, equal to $2.72 a share on 420,780 shares of common stock, compared with $1,340,284 or $3.15 a share in 1939.

Flintkote Earnings Rise

The Flintkote Company and subsidiaries, year ended December 31, reports net sales of $19,897,748, compared with $17,164,148 in the preceding year; net income $1,436,550 after taxes and charges, equal to $2.10 a share on 685,196 shares, compared with $1,432,383, equal to $2.11 a share.

Central Paper Nets $231,790

The Central Paper Company, Inc., for the six months ended December 31, reports a net profit of $231,790, compared with net profit of $163,400 for six months ended December 31, 1939; net sales, $1,956,023, against $1,618,992.



CONSTRUCTION NEWS

Lockland, Ohio—The Gardner-Richardson Company, Middletown, Ohio, manufacturer of paper board stocks, carton board, etc., has completed plans for new addition to mill on South Cooper avenue, Lockland, comprising a one-story structure, to be used primarily for storage and distribution. Contract for erection has been let to the Sorenson Construction Company, 27 Walnut street, Wyoming, Ohio, and superstructure will be carried out at early date. No estimate of cost has been announced.

Waterbury, Conn.—The Waterbury Paper Box Company, 155 South Leonard street, manufacturer of paper boxes and containers, etc., is having plans drawn for alterations and improvements in plant, primarily of interior character. Contract for work is scheduled to be awarded soon. Henry Moeckel, Naugatuck, Conn., is architect.

Kansas City, Mo.—The Waxide Paper Company, Twentieth and Tracy streets, manufacturer of waxed and kindred paper stocks, printed specialties, etc., has work under way on new one-story addition, previously referred to in these columns, and expects to have the structure ready for occupancy in near future. No estimated cost has been announced. The T. G. Schweiger Contracting Company, 1525 Michigan avenue, Kansas City, has the general erection contract; John R. Brunt and Charles H. Bleistein, New York Life Building, are architects.

Houston, Tex.—In connection with an expansion program at plant at Lockwood and Clinton streets, Houston, the American Can Company, 230 Park avenue, New York, will build an addition to paper and lithographing department, providing for considerable increase in present capacity. Entire project will represent an investment of about $500,000. Erection will be placed under way at once.

Atlanta, Ga.—The Southern Waxed Paper Company, 840 Woodrow avenue, S.W., manufacturer of waxed and other kindred paper stocks, has approved plans for one-story addition, for expansion in production division. It is reported to cost over $25,000, with equipment. Contract for erection has been awarded to Sam N. Hodges, 262 Rumson road, N.E., Atlanta, and work will be placed under way at once.

Indianapolis, Ind.—The Indianapolis Paper Container Company, 217 West 10th street, manufacturer of paper boxes and containers, has awarded general contract to A. V. Stackhouse Company, 635 North Pennsylvania street, for new one-story addition to plant, about 60 x 130 feet, to be used for storage and distribution service. Cost estimated close to $20,000, including equipment. Erection is scheduled to begin at early date.

Bogalusa, La.—The Gaylord Container Corporation, Pulp and Paper Division, 2820 South 11th street, St. Louis, Mo., manufacturer of kraft wrapping, container liner and other paper stocks, will begin superstructure soon for new addition to paper-converting plant at mill at Bogalusa, to be carried out in connection with a large expansion program, previously referred to in these columns. An award for structural steel framing, totaling about 150 tons, has been made to the Ingalls Iron Works Company, Birmingham, Ala., with fabrication to be carried out at its Pittsburgh, Pa., plant. New unit is expected to be ready for occupancy during the spring, and will be equipped for the production of paper bags and containers, including large-sized sacks, for the grocery and allied trades. It will be two-story high and is reported to cost over $350,000, with equipment. Entire mill expansion is estimated to cost approximately $6,000,000.

Montreal, Que.—The Rosenbloom Paper Supply Company, Ltd., 6744 Hutchison street, commercial paper products, has plans under way for new one-story addition to converting department, reported to cost close to $50,000 with equipment. It is understood that bids will be asked soon on general erection contract.

Donnacona, Que.—The Donnacona Paper Company, Ltd., manufacturer of newsprint, insulating board, etc., has approved plans for construction of a new timber dam at mill, to be 800 feet long and estimated to cost close to $75,000. Contract has been awarded to the C. Gagnow Company, 86 Mountain Hill street, Quebec, Que., and work will proceed soon.

Ottawa, Ont.—The Dorn Loose Leaf Company, Ltd., 278 Spark street, manufacturer of commercial paper products, has plans under way for new paper-converting plant on Parkdale avenue, where site has been acquired. It will be one-story, reported to cost close to $60,000, including equipment. Large capacity will be carried out at new location.

Rome, Ga.—The Tubize Chatillon Corporation, 2 Park avenue, New York, N. Y., manufacturer of viscose rayon products, has preliminary plans under way for expansion and improvements in mill at Rome, including new building units and installation of equipment for considerable increase in present capacity. A similar program also is scheduled to be carried out at branch mill at Hopewell, where sizable increase in present output is planned. Company is arranging for financing in gross amount of about $4,500,000, a portion of the proceeds to be used for purpose noted. Company engineering department will be in charge of projects.

Toronto, Ont.—Canadian Wire Bound Boxes, Inc., 1000 Gerrard street East, manufacturer of corrugated paper boxes and containers, etc., will take bids soon on general contract for two new additions to plant for increased capacity, each to be one-story, about 80 x 80 feet and 25 x 100 feet, respectively. Plans are nearing completion. Cost is reported close to $80,000, including equipment. J. M. Cowan, 9 Margueretta street, Toronto, is architect, in charge.

New Companies

New York, N. Y.—The Oswego Tissue Mills, Inc., has been chartered with capital of 200 shares of stock, no par value, to manufacture and deal in tissue papers for facial and other use. New

company is represented by Martin H. Weisman, 358 Fifth avenue, New York, attorney.

New York, N. Y.—The Aquatex Paper Products Corporation has been organized with 200 shares of stock, no par value, to deal in commercial paper products of various kinds. New company is represented by N. H. Sirota, 175 Fifth avenue, New York, attorney.

Brooklyn, N. Y.—The United States Marking Tag Company, Inc., has been chartered with capital of 100 shares of stock, no par value, to manufacture paper tags, labels and kindred products. New company is represented by Dorff & Levy, 8 West 40th street, New York, N. Y., attorneys.

Utica, N. Y.—Johnnie Paper, Inc., has been incorporated with capital of 200 shares of stock, no par value, to deal in paper products of various kinds. New company is represented by Edward M. Brown, Utica, attorney.

Brooklyn, N. Y.—The Royal Wallpaper Company, Inc., has been incorporated with capital of $20,000, to deal in wall paper stocks and allied paper goods. Julius Kaplan, 430 Flushing avenue, Brooklyn, attorney, is company representative.

Lubrication in Paper Mills

The Socony-Vacuum Oil Company has recently completed a splendid educational technicolor film entitled "Pulp and Paper Mill Lubrication." This film starts with lubrication in the wood yard and carries it through every phase in the process of manufacture until the finished product is ready for shipment. While the numerous varieties of lubrication employed in the pulp and paper mill are vividly flashed on the screen, a phonographic record explains in detail why certain types of lubrication are necessary under the peculiar circumstances being visualized on the screen. Grinders, beaters, Jordans and fourdrinier and cylinder paper making machines from the wet end through the driers and the winders, are all carefully discussed from the viewpoint of lubrication and lucid explanations are offered as to why one type is required for certain needs and an altogether different type is required for others.

The film cannot fail to impress the observer with the fact that proper lubrication in the manufacture of pulp and paper is not only an interesting subject, but an extremely important one as well. Showing time consumes about one-half hour.

The film will be exhibited at the plant of any paper concern which expresses a desire to see it. Correspondence regarding arrangements should be directed to the Socony-Vacuum Oil Company, 26 Broadway, New York City.

Algonquin Elects Officers

[FROM OUR REGULAR CORRESPONDENT]

OGDENSBURG, N. Y., February 10, 1941—Announcement is made here of the reelection of all officers and directors of the Algonquin Paper Company following the annual meeting held here this week. The officers reelected include Frank A. Augsbury, president; Bessie S. Augsbury, vice-president, and H. C. Howes, secretary and treasurer. The directors include Mrs. Augsbury, Harold S. Smith, Hewlett P. Strong and H. C. Howes.

Piping Troubles?

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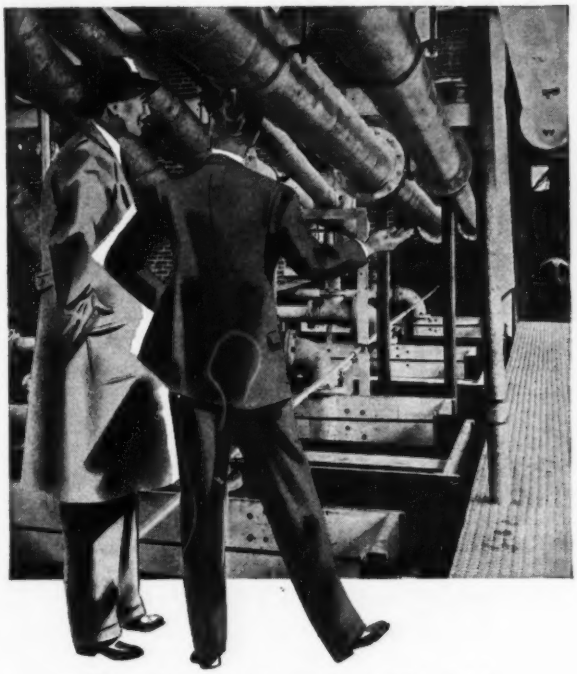

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NEW BUILDING NEARLY FINISHED

(Continued from page 7)

Wisconsin Power and Light Company, Wisconsin Dells dam, $6,300, Prairie du Sac dam, $10,291.

Rhinelander Paper Company, Rhinelander dam, $1,920; Tomahawk Pulp Company, King's dam, $1,339; Tomahawk Kraft Paper Company, Grandmother dam, $2,742; Wausau Paper Mills Company, Brokaw dam, $447; Marathon Paper Mills Company, Rothschild dam, $2,822; Mosinee Paper Mills Company, Mosinee dam, $2,349; Wisconsin River Paper and Pulp Company, lower Stevens Point dam, $6,062, and Whiting-Plover Paper Company, Plover dam, $150.

New Legislation on Sulphite Waste

Sulphite mills which would be the object of a bill introduced in the Wisconsin Legislature to solve their waste disposal problems by 1942 or be penalized have the backing of the Wisconsin State Board of Health in their opposition to such a law. L. F. Warrick, state sanitary engineer, declares that the preliminary studies undertaking by the Institute of Paper Chemistry, Appleton, Wis., under financial arrangements underwritten by Wisconsin mills, may take five years to complete.

"Progress has already been made in the (Fox River) Valley area," said Mr. Warrick, "It would be impractical to say, by law, that the research now under way must be completed on schedule by the end of 1942. We've been working on sulphite waste disposal since 1878, the industry has been impressed with the urgency of the problem, and they have set up a research project which may take five years to develop a solution. We're going right ahead with this work, and have shown substantial progress with the best technical minds in the industry cooperating.

"We feel that we can get sulphite licked, and when we do we can restore the Fox River and lower Green Bay to a reasonably clean condition. That's our object now."

The legislation was instituted by commercial fishermen at Green Bay, Wis., who blame water pollution for dwindling catches of fish. The board of health under present law has authority to compel mills to refrain from dumping their wastes into the river, but has had no desire to be arbitrary, recognizing the seriousness of the problem involved.

William E. Buchanan, president of the Appleton Wire Works, Appleton, Wis., was the speaker at a meeting of the Kimberly-Clark Society of Engineers at a dinner February 4 at the Copper Kettle at Appleton. Forty-five were present. A visit was made to the plant following the meeting.

Urges Lakehead Commission

TORONTO, Ont., February 3, 1941—Mayor C. W. Cox, of Port Arthur, has announced that he would urge the Ontario government to appoint a commission, free of politics, to administer the resources of the lakehead district of Ontario. He charged the Ontario government's present timber policy will spell ruin for the country.

Mayor Cox contended the government needlessly had spent $1,000,000 in digging a waterway from Longlac to Lake Superior for United States pulp mills, and thereby had deprived Canadian railways of millions of dollars in freight charges.

Technologists Needed

The United States Civil Service Commission has announced open competitive examinations to secure technologists for national defense work. Difficulty is being experienced in filling positions in such branches of technology as explosives, fuels, plastics, rubber, minerals, and textiles. Persons qualified in these branches are particularly urged to file application.

The positions to be filled are in several grades with salaries ranging from $2,000 to $5,600 a year. For the lowest grade, that of junior technologist in any specialized branch, applicants will be required to take a written general test. For the other grades, competitors will not have to take a written test but will be rated upon their education and experience.

The duties of the higher grade positions include the planning, conducting, and reporting of investigation or research in a specialized branch of technology; or the testing, designing, or manufacturing of the materials essention for the successful operation of an industrial plant. For the junior grade, the duties are to perform scientific work in a branch of technology such as ceramics, minerals, paper, petroleum, rubber, or textiles. All applicants must have completed a 4-year college course with specialized major study, and for all but the junior grade, appropriate experience in the field of technology must also be shown.

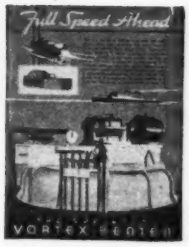
Applications for the position of junior technologist must be filed at the Commission's Washington office not later than February 20 if sent from States east of Colorado, and February 24, 1941, if sent from Colorado and States westward. For the other technologist positions, applications will be rated as received until December 31, 1941. Further information and application forms may be obtained from the Secretary of the Board of U. S. Civil Service Examiners at any first- or second-class post office, or from the U. S. Civil Service Commission, Washington, D. C.

Speeds Up Production and Cuts Beating Costs

The powerful, rapid action of the Appleton Vortex Beater greatly reduces beating time in the many mills where this equipment is installed. Lap pulp is disintegrated as fast as it can be furnished. When the stator is lowered, hydration begins. Fast loading, rapid cycling, thorough beating and mixing, high production and quick dumping produce profitable operating advantages. With the Appleton Vortex Beater stock is prepared in less time, with less power, in half the space and at lower cost.

APPLETON VORTEX BEATER

Descriptive folder sent upon request.



THE APPLETON MACHINE COMPANY • Appleton • Wisconsin

Paper Trucks and Valves

Two types of hand trucks for carrying rolls of newsprint paper are included in the industrial equipment manufactured by The Fairbanks Company, 393 Lafayette street, New York. Special Roll Paper Truck is provided with an extra set of wheels which rest on the floor to relieve the operator from holding the load and thus enable one man to handle loads from 1800 to 2000 pounds with ease and safety.

The Fairbanks Pan Nose Truck is a special two wheel, pan-nose paper truck, of all steel construction, with full length hardwood handles and a capacity for rolls weighing from 1800 to 2000 pounds. This type is especially adapted for handling paper rolls in and out of cars and in warehouses.

A new line of Fairbanks bronze gate valves has been designed to provide greater strength, longer life and lower maintenance cost. The most advanced engineering practice has been incorporated into each detail of its construction.

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

Henry J. Berger
EDITOR

Vol. 112 February 13, 1941 No. 7

COMING EVENTS IN PAPER INDUSTRY

American Paper and Pulp Association, Sixty-fourth Annual Convention and meeting, Waldorf-Astoria Hotel, New York, February 17-21.

Technical Association of the Pulp and Paper Industry, Convention, Roosevelt Hotel, New York, February 17-20.

Salesmen's Association of the Paper Industry, Annual Meeting and Luncheon, Waldorf-Astoria Hotel, New York, Tuesday, February 18.

National Paper Trade Association of the United States, Convention, Waldorf-Astoria Hotel, New York, February 17-20.

The New York Association of Dealers in Paper Mills' Supplies, Annual Banquet, Commodore Hotel, New York, Tuesday, February 18.

New England Section. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

Delaware Valley Section. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

Lake States Section. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

Kalamazoo Valley Section. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

American Pulp and Paper Mill Superintendents Association, Twenty-second Annual Convention, Poland Spring House, Poland Spring, Me., June 17-19.

BUSINESS IS CHANGING

For more than half a century the sale of securities has represented a very large business. Wall Street during that period has been accredited with a sales volume that once reached over 11½ billion dollars in one year, and an almost prophetic aptitude in calling the turn on the trend of general business activity. The preeminent ability to forecast may, possibly, have survived but the volume of trading so long associated with the financial district of New York, has sharply dwindled. In the record year of 1929, the total of new and refunding financing was $11,592,000,000, the total new capital, $8,114,000,000. During the low point in the depression year of 1933 the total dropped to $1,054,000,000; total new capital to $710,000,000. The loss, the volume of which is sometimes thought of as in index of business expansion, is not expected to be regained. In 1939, the total was $5,837,000,000 of which new capital financing was $2,293,000,000. In its heyday, the buildings in the financial district were almost fully occupied. This is perhaps so today, but the tenants are in large part engaged in engineering, law, insurance, or in activities other than directly connected with stocks and bonds. This change in Wall Street fairly well typifies a change in American business which has occurred and the prospect of other changes in the future.

To inquire whether the change has contributed to the benefit of the country is of less importance than to realize that force has accomplished this shift. The answer is, of course, government regulation. The power of the Federal Government has been expanding ever since the United States was formed. And since the inauguration of the more liberal and therefore more socialistic policy known as the New Deal, the growth of Government through the rapidly increasing bureaus at Washington has rapidly increased. It is of less importance to a business man to inquire whether or not this expansion of centralized political supervisions is in the best public interest, than to ask what is likely to follow.

In the present trend of government supervision of industry there is clearly indicated, for example, little cessation of the activities of the Department of Justice in its anti-trust endeavors. To many business men it must seem inconsistent as well as confusing for government department officials, who are, of course, public servants, counsel business men to act together to keep prices low and stable regardless of the demands made by the national defense program, and to be also told that to act in concert is a violation of the law under penalty of prosecution.

Ambiguousness, narrow and specious thinking and ill-conceived legislation has always formed too substantial a part of laws enacted by all political parties. The present administration may be criticized more severely on the quality of its laws because more radical changes have been made by it during the last eight years than ever before. Doubtless more need of change was required but there is some reason to doubt that emergency was so pressing or urgent as some supposed, or that the hastily framed acts have been eminently satisfactory. Thus, the Wagner Act and the Wage and Hours Act, in particular, need amending to become clearly understood and justly interpreted.

Severe government regulation has reduced the business of the security markets most substantially and bad tax laws have slowed down business to an important extent. The recent decline in the stock market is reported to have been received with some concern by government officials. The huge expenditures provided for national defense needs was generally viewed as certain to bring higher stock prices and stimulate the flow of investment funds into private enterprises. But there are some considerations of great importance to all business men in the present economic situation which government officials seem to have overlooked: that the time for large investment in industrial plants does not appear opportune for several reasons. The prospect of higher income taxes makes the purchase of stocks and bonds less attractive to large investors. Government insistence on plant expansion makes it necessary for private enterprise to restrict dividend payments and reserve more earnings for this expansion. And a third probable reason is caused by the uncertainty of the out-

come of the European conflict and the difficulties that are likely to follow its termination, whatever the terms, in the economic stress which a readjustment entails.

Another difficulty which many business men view with concern is the danger of a boom and doubt if rapidly rising prices can be controlled. The trend of the cost of living is upward, the prices of some commodities are thought by competent authority to be rising too rapidly and it has been pointed out that the effect of the expenditures for national defense will produce much the same inflationary results which the belligerent nations are now experiencing. From information now available it seems likely that the United States will adopt a plan similar to that in use in Great Britain. Armament plants will be given priority on materials they require. The Government will insist, perhaps under threat of taking over recalitrant plants, that industry must expand facilities to meet the defense need. To curtail civilian spending the Government will offer securities, thus providing more funds for government spending and to provide a cushion of savings which may be needed when Government spending ends.

There is a possibility, of course, that it may be necessary for the Government, in some cases, to fix maximum prices and enforce those levels by law. It may be encouraging to private enterprise that the President has pledged not to interfere with private business. In a radio broadcast speech made on February 9, on the thirty-first anniversary of the Boy Scouts of America, President Roosevelt said in part: "In this grave hour national defense dominates the heart, mind and soul of America. The Government must take the major responsibility since it alone represents all of the people acting in concert. But the Government cannot and should not preempt those fields of private endeavor that have become an indispensable part of life in America."

Special APPA Meeting on Feb. 17

A special meeting in connection with the annual convention of the American Paper and Pulp Association, to be held at the Waldorf-Astoria Hotel, New York, February 17-21, has been announced by E. W. Tinker, executive secretary of the association.

This luncheon is being held for the specific purpose of considering problems now facing the industry and the association. George H. Mead, president of the Mead Corporation, will be the principal speaker on the program. Early reservations are requested.

Attention is also called to the open forum on labor relations to be held on Wednesday, February 19, at 2:00 P. M. Ralph A. Hayward, president of the Kalamazoo Vegetable Parchment Company, will present a short talk on the "Importance of Sound Labor Relations to Management," and Mr. D. C. Everest, Group Executive, Advisory Commission to the Council of National Defense, will discuss the National Defense Program and "Its Effects on the Industry's Labor Forces." Each of these talks will be followed by questions and general discussion from the floor.

Production Ratio Report

These reports are based upon paper production reports to the American Paper and Pulp Association.

COMPARATIVE MONTHLY SUMMARIES[1]

Months	1941	1940	1939	1938	1937	1936	1935	1934
Jan.	86.0%	90.2%	77.5%	63.9%	90.3%	76.1%	65.8%	.....
Feb.	.....	86.2%	81.7%	68.7%	90.1%	77.9%	70.0%	.....
Mar.	.....	83.9%	84.0%	69.6%	90.3%	76.0%	70.5%	.....
Apr.	.....	86.3%	82.9%	68.3%	92.1%	82.3%	70.0%	.....
May	.....	91.8%	80.2%	69.0%	90.6%	81.6%	69.4%	.....
June	.....	93.8%	79.7%	66.0%	87.3%	80.7%	72.3%	.....
July	.....	87.1%	75.2%	72.0%	81.8%	77.3%	64.9%	.....
Aug.	.....	87.2%	82.9%	77.2%	82.9%	81.5%	70.9%	.....
Sept.	.....	83.2%	88.7%	76.3%	78.6%	80.5%	71.9%	58.2%
Oct.	.....	88.0%	96.6%	82.5%	73.5%	87.6%	75.6%	64.7%
Nov.	.....	86.9%	97.2%	79.6%	61.9%	88.0%	75.3%	61.7%
Dec.	.....	83.3%	91.1%	74.4%	54.5%	85.9%	71.2%	59.6%
Year Avg.	.....	87.5%	84.9%	72.3%	80.6%	81.3%	70.5%	.....
First 5 weeks	86.0%	90.2%	78.1%	64.5%	89.9%	76.4%	65.8%	.....

COMPARATIVE WEEKLY SUMMARIES[1]

CURRENT WEEKS		CORRESPONDING WEEKS	
Dec. 28, 1940 (Holiday Week)	64.3%	December 30, 1939	76.2%
January 4, 1941	82.2%	January 6, 1940	88.0%
January 11, 1941	88.6%	January 13, 1940	92.7%
January 18, 1941	89.3%	January 20, 1940	90.1%
January 25, 1941	87.9%	January 27, 1940	91.2%
*February 1, 1941	86.1%	February 3, 1940	89.2%

The following statistics show the number of mills reporting by ratio groups:

Ratio Limits	Number of Mills Reporting—Current Weeks: Dec. 28, 1940	Jan. 4, 1941	Jan. 11, 1941	Jan. 18, 1941	Jan. 25, 1941	Feb. 1, 1941
0% to 50%	108	80	49	45	40	31
51% to 100%	181	212	236	222	225	201
Total Mills Reporting	289	292	285	267	265	232

PAPERBOARD OPERATING RATIOS

Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1936	62%	67%	67%	70%	69%	70%	69%
1937	80%	86%	86%	88%	85%	77%	66%
1937	54%	60%	61%	57%	58%	56%	57%
1939	60%	67%	71%	69%	64%	67%	63%
1940	71%	70%	69%	70%	76%	79%	72%
1941	75%	....	....	....	....	....	....

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1936	75%	78%	82%	80%	74%	72%
1937	74%	69%	65%	55%	45%	73%
1938	66%	66%	70%	65%	59%	61%
1939	72%	74%	84%	81%	71%	70%
1940	74%	72%	79%	77%	71%	73%
1941	....	....	....	....	....	....

Week end. Dec. 28, 1940—48%
Week end. Jan. 4, 1941—59%
Week end. Jan. 11, 1941—77%
Week end. Jan. 18, 1941—78%
Week end. Jan. 25, 1941—78%
Week end. Feb. 1, 1941—79%

[1] Production-capacity ratios are based upon six-day capacity ratings which are adjusted periodically to correspond with the ratings reported by individual companies. Ratios are subject to revision until all reports are received.

* Preliminary figure.

Adirondack Core Co. Damaged

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., February 10, 1941—The plant of the Adirondack Core and Plug Company suffered damage from fire last week which demolished a portion of the upper section. Speedy action on the part of the local fire department is believed to have prevented a much greater loss. The section of the building burned is occupied under lease by the Stayman & Ellins Company of Utica. A cupola at the top of the structure was also destroyed and the damage was estimated at several hundred dollars. It was stated that machinery in the structure was not damaged. Zero weather prevailed at the time and a stiff breeze was blowing in the direction of the planing mill which probably would have been damaged if the fire had not been quelled quickly.

They Started Something!

WHEN VOLTA constructed the first electric cell, he brought into existence a convenient, economical source of electric energy which has found countless applications. The principle of the Voltaic cell forms the basis of the modern dry cell, and paved the way for the invention of the storage battery Nor was the value of Volta's work limited to the field of electricity. In his search for the most effective combination of metals for the production of electrical energy, he discovered the arrangement of elements in the electro-chemical series—an arrangement that plays a part in many chemical reactions, and led to far-reaching developments in the science of chemistry

When EBG engineers first made Liquid Chlorine commercially available in this country, their work also was destined to result in advances in widely diversified fields. In safeguarding the public health, municipal authorities found EBG Liquid Chlorine an exceptionally effective means for purifying water and limiting the spread of water-borne diseases. In the increasingly important field of sewage sterilization, EBG Liquid Chlorine is playing an outstanding part in preventing and abating pollution of rivers and harbors. And in the paper and textile industries, it has made possible new standards of efficiency and economy in bleaching processes.

The first cylinder of Liquid Chlorine made by EBG in 1909.

Pioneers in the production of Liquid Chlorine, EBG engineers have long years of experience in its manufacture and servicing. Let their experience work to *your* advantage — specify EBG Liquid Chlorine when you buy.

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Plant: Niagara Falls, N. Y.

EBG Liquid Chlorine
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PAPER TRADE JOURNAL

Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald. Secretary

Status of Stiffness Testing of Containers*

By Pierre Drewsen[1]

Abstract

The results of a questionnaire survey on methods of testing the various materials of the corrugated paper container industry for stiffness are given and show a general uniformity of objectives but many differences in sampling and the details of test procedure. The need for uniformity in test procedures is pointed out and the adoption of TAPPI Standards is recommended.

One significant and permanent type of contribution which the personnel of the Technical Association of the Pulp and Paper Industry and similar organizations make to industry is the standard testing method. In its finished and practical form it embodies two factors, an instrument and a specification, which is a formally accepted and written description of how the instrument is to be used to measure the characteristic or property which it is desired to discover. The continued development of standard testing methods offers to an industry one of its most constructive channels of cooperative effort and one in which the element of competition, as generally understood, is entirely absent.

The present generation is witnessing the creation and rapid growth of a number of relatively new industries, of which the paper container industry, including all its widely spread divisions, is one. The extremely rapid growth of such industries both in volume and technology increases the difficulty and the responsibility of providing the necessary instruments and specifications with the minimum time lag. It is not the purpose of this paper to discuss instrumentation or methods in general, but to set forth the results of a survey made last year into the status of testing methods in the corrugated box industry. Our task is to state the facts and ask why. It is the task of TAPPI to furnish the answers.

A session of the Container Committee at the TAPPI Annual Meeting in 1940 was devoted to discussing what it might contribute to TAPPI Standards. The suggestion was made that a questionnaire be sent out on methods of testing container liner, corrugating, single- and double-faced board, and corrugated boxes for stiffness. The replies to the questionnaire reveal a general similarity in objectives but vast differences in the details of their accomplishments.

To begin with, it was recognized that our nomenclature might be standardized to some extent, particularly with respect to the word used for designating the characteristic we are immediately concerned with: *stiffness, rigidity, crushing resistance.* One of the first responsibilities of TAPPI will be to decide which word or expression shall be used in this present sense, and to formulate an acceptable meaning for it. As a starter we proposed and invited criticisms of the following definition: *"Stiffness* is that property of container board or container material which resists compressive forces measured by the compressive force in pounds required to produce a permanent break or distortion under standard conditions of test." One reply suggested that *compressional resistance* be used instead of *stiffness* for the reason that the latter is already defined in standard handbooks, hence its adoption as suggested might be a source of some ambiguity. It is obvious that TAPPI must adopt a satisfactory definition of the most important property of the paper box.

Conditioning Rooms

Six replies indicated the possession of a conditioning room, five of which were operated at constant humidity while one was equipped with special apparatus for conditioning to constant moisture content. One of the five laboratories has four conditioning rooms; three of them operating at 40, 65, and 90% relative humidity and one on the basis of conditioning samples to constant moisture content. Of the remaining four laboratories; one employs 45% relative humidity and 72 deg. F., two have standardized on 40% relative humidity and 75 deg. F., and one on 65% relative humidity and 70 deg. F. Of course, since this survey was made some changes have been contemplated in the specifications for conditioning, and it is possible that some of the variance we are reporting has already been eliminated. It should be easy to adopt a conditioning standard and have it observed uniformly throughout the industry.

Sealing Practice

The manner of sealing empty boxes prior to the compression test is without any question sufficiently important to standardize. Two laboratories seal the boxes before conditioning, two condition them both before and after sealing, and one seals them between a period of preconditioning and the final conditioning. It is important that the practice of preconditioning be made uniform and be included in the

* To be presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Roosevelt Hotel, New York. N. Y., Feb. 17-20, 1941.

[1] Member TAPPI, Chemical Engineer, Hinde & Dauch Paper Co., Sandusky, Ohio.

standards. The reported time for conditioning varied from 15 to 48 hours. One laboratory reported "to stabilization," implying that the specimen is brought to constant weight. Since our questionnaire was sent out the A.S.T.M. has taken steps to standardize this time factor.

The respondents were fairly unanimous in the matter of adhesive, silicate of soda being generally applied with a hand-operated brush. One did say, however, that they sometimes use paste, and one mentioned "sealing tape."

Large Scale Compression Units

There are some differences in the types of apparatus used for making the large capacity compression tests, but we shall not discuss these as we are concerned with results rather than with the manner in which they are obtained. The speeds at which the upper platens of the compression machines descend varied from 0.4 to 0.7 inch per minute, one reporting "various."

Three of the compression machines draw stress-strain diagrams, but three are not so equipped hence their operators must record the load at every tenth of an inch reduction in space between the platens.

Five reported making moisture tests on the box specimens after the compression test; one does not.

Compression Tests on Specimens Smaller Than Complete Boxes

All replies indicated that the reporting laboratories make stiffness tests on specimens of the various combined and uncombined materials used in the corrugated box industry. On container liner and on corrugating, that is to say, on the uncombined flat sheets, five make "ring tests" and one "straight strip" tests. Five out of the six reported the practice of making flat crush tests on corrugated material. The flat crush test is a compression test with the force applied perpendicular to the plane of the double- or single-faced board. Three make "on end" tests on double-faced material. Three make beam tests to determine bending resistance, and one reported a "bond" test, which measures the combining strength of the adhesive.

Reasons for Making Small Specimen Tests

Four laboratories use small specimen compression tests for the control of quality in their paper mills on all grades of paper made. Four indicated that such tests are also used for the control of the quality of the finished product in the box plant. Five employ them for regular routine laboratory tests for general check purposes, and six use such tests occasionally for specific information. Tests made for other purposes included such answers as "check on purchased material," "complaints," and "establishment of box plant and mill policies."

One laboratory uses moisture-free samples for the control of paper mill quality. Two reported occasional tests on moisture-free samples, and three said they never test moisture-free samples. None of them makes tests on samples which are strictly unconditioned. Five condition at definite temperature and humidity and one to a constant moisture content. Replies on length of time of conditioning varied from "to stabilization" to "to moisture-free," and from "1 to 4 hours" to "from 1 to 24 hours."

The equipment used consisted of: four Riehle testers, one Perkins, and one Hinde and Dauch. The sample cutters reported: two Schopper, one Eastman Kodak, one Thwing, one Ideal, and one Jacques. Three reported the use of "special' templates to hold samples during the test, and three replied, none.

Sizes and Shapes of Small Specimen Samples

The samples show considerable lack of uniformity. One laboratory uses specimens 2 by ½ inches for calipers up to 0.022 inch and 6 by ½ inches for calipers over 0.022 inch. One uses 6 by ½ inches for all ring tests and 3 by 3 inches as well as 12 by 12 inches for flat crush tests. Another uses specimens 3¼ by 1½ inches for ring tests on corrugating paper, and 12 by 12 inches samples for flat crush tests using the large scale compression machine. One uses 6 by ½ inches samples coiled up into a cylinder ¾ inch in diameter, and two use a 10-square inch area circle for flat crush tests. Obviously here is a fruitful field for standardization.

Commercial Aspects of Small Specimen Compression Tests

Three laboratories reported that they test every reel of paper made in their mills while three make tests at irregular intervals. Three employ special operators for this purpose. Two reported that they keep old samples for six months while one keeps them for two months. One mill rejects a substandard product on the basis of these tests, and the others use the test results as a signal to machine operators to make the necessary changes.

Ring tests and "on end" tests were reported by one laboratory for the control of box plant quality on all items; two reported using them for the control of some items, and one of these for spot check tests. Three reported using one special operator for such tests. Three reported using substandard test results as a signal to plant operators, but none of them used the figures as the basis for the rejection of such product. One laboratory claims having originated the ring test. One claims having used it for 8 years and one for 5 years.

Four indicated their belief that standard testing methods should be adopted throughout the industry, but one was doubtful about this and one thought that the time was not yet ripe. Four expressed willingness to have their tests adopted by the industry, but two were uncertain whether this could be done, for an undisclosed reason. Four indicated their agreement with the idea of changing their methods to conform to standardized industry practice, when and if adopted, but two doubted whether such an arrangement could be made, though they gave no reason for their statement.

This report should leave no room for doubt that there exist considerable differences in practice and plenty of nonuniform methods of testing. Our opinion as to the reason for this is the following: this type of testing was started during the depression and became quite active about the year 1932. As each laboratory discovered the ring test, in one way or another, and developed other techniques related to it, the idea probably grew that it had something of value and therefore a policy of secrecy was adopted, just as in the case of any supposedly secret process. There is still considerable secrecy, but indications are now clear that such secrets are leaking out, not surreptitiously, but through the simple natural process of being discovered by the

research of any intelligent individual who cares to devote the necessary time and patience to the work.

At any rate, the above shows that the testing of stiffness in the corrugated paper industry developed with very little interlaboratory cooperation, all of them working more or less along the same line, but each adopting a technique different from all others. It is hoped that this paper will stimulate thought and discussion, and that it will lead to a changed viewpoint about these matters, and to the cooperative effort which will result in uniformity. It seems unnecessary to point out that this policy of secrecy has contributed nothing to the progress of the industry.

Automatic Spot Cutting Control

For some time there has been a demand for equipment which would automatically register the cut of a rotary cutter with a printed mark, in order to locate the printing on a sheet. Wrappers for bread, candy, etc., are printed in the web on rotary presses and then wound in rolls. The printing press makes positive imprints, but in winding or processing after the printing, the web may stretch or shrink unevenly and the distance between any two or more points will vary, sometimes increasing, sometimes decreasing. Because of these inaccuracies it is impossible to draw the paper from a printed roll and cut it to even lengths and still have the printing localized.

In the past it has been customary to have an operator watch at the cut-off to correct for these errors. At slow speeds this is reasonably accurate, but the operator cannot correct until after the error has become apparent, then the damage has been done. Also, the operator's eyes become tired and quite an error may creep in before correction is applied.

After experimenting for over three years to overcome this condition, The Smith & Winchester Mfg Company of South Windham, Conn., has developed an automatic control which corrects errors before the cut is made and is independent of the operator over long runs, keeping the printing and cutoff in very close registration limits on most printing, at the same time allowing the cutter to be operated at a higher speed with accurate results. Instead of the human eye watching the printed marks, use is made of the electric eye which never tires. The operation is outlined as follows:

A contrasting spot 1/16 x ¾ inches is printed on the web at the same time as the regular printing and at some convenient location, preferably on the edge of the web. This mark indicates the point at which the sheets are to be cut from the web. As this spot passes under a specially designed scanning bead which contains the photoelectric tube and an amplifier tube, the change of intensity of light sets up a minute current in the photo tube which is amplified by the Pliotron tube sufficiently to operate a Thyratron relay. This in turn operates a time delay relay power switch which connects the current to a controlling motor.

In the circuit between the Pliotron and the Thyratron tubes is placed a selector switch. This switch automatically determines whether a correction is required and in which direction it should be applied. The time delay arrangement controls the length of time a correction is to be applied.

Every time a spot passes under the photoelectric eye an impulse is set up. When the spot is in proper register with the cutting knife the selector switch is in neutral and so set that no current passes through it.

On the other hand, if the spot is too early or too late this selector switch passes the current to whichever Thyratron relay is required to advance or retard the position of the cutting. The diagram shows the plan of this operation.

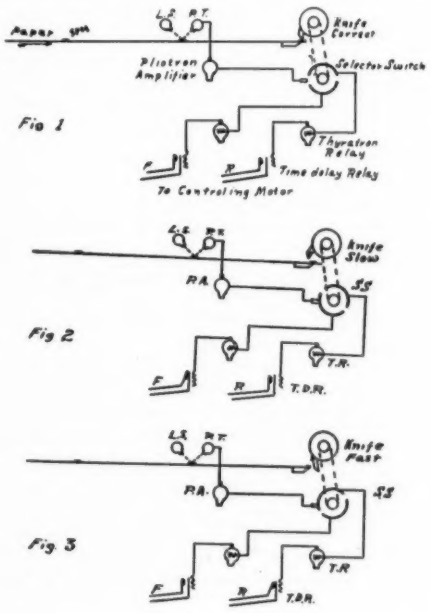
Figure 1: Indicates the normal position with the knife cutting correctly on the mark and no contact is made at the selector switch.

Figure 2: Indicates the knife "late" and contact on the selector switch closes relay "F" which sends the current to the motor in order to advance the position of the knife.

Figure 3: Indicates the knife "fast" or "ahead" of the mark and contact on the selector switch closes the time delay relay "R" which retards the knife.

By means of an instantly reversing motor and special differential gear arrangement it is possible to correct the location of the knife during each revolution an amount which is predetermined, but adjustable.

This arrangement is operating successfully on bread wrappers and other preprinted rolls of paper at speeds up to 300 feet or more, making 86 cuts per minute with a variation, depending on the material, of within limits of plus or minus ⅛ inch from the mark, and on a great many grades no variation is noted, as the knife cuts on the mark every revolution. It must be understood that each installation has to be engineered individually, as a set standard is not possible, local conditions entering into the operation which must be taken into consideration.



Oswego Tissue Buys Mill

The Oswego Tissue Mills, Inc., Victor Cohen president, 295 Madison avenue, New York, has announced the purchase of the Oswego River Paper Mills, Phoenix, N. Y. The Oswego River mill has not stopped operations at any time and has been a producer of high-grade toilet papers for over half a century. It is the intention of the new owners to maintain the same high standard of quality.

Chart Making by the U. S. Coast and Geodetic Survey*

By D. P. Barnette[1]

Abstract

Nautical charts are indispensable to the mariner for the safe conduct of his vessel. The U. S. Coast and Geodetic Survey is the administrative agency which prepares and publishes nautical and aeronautical charts of the United States and its possessions. The nautical chart is an engineering product based on accurate field surveys and constructed on sound technical principles. Its reproduction and printing are accomplished by the latest improved methods. Frequent revisions of the chart are made to keep abreast with important natural or artificial changes.

We are all users of maps, and maps, especially in this day of world events, are always intriguing. Whenever we contemplate a trip or tour by auto, we get busy consulting the road maps of the oil companies or the "Three A" maps and books, and in driving from one locality to another, the system of road marking by numbers is one of the finest devices possible for finding your way, and in following these markers the roads stretch out before us and careful driving by day or night brings us to our destination. These highways of traffic you can see and your safety, insofar as the map is concerned, lies in your own hands. It is here that the chart differs from the road map.

Great bodies of water are all highways of commerce and the lanes of traffic, though marked precisely on the chart, are not visible as you travel, and here your safety lies in the hands of the chart maker.

When you look upon the broad expanses of our rivers, bays, gulfs and oceans, they all look alike; of course instinct tells us that shoal water is near the shore, but in many places beneath the surface, in apparently deep water, lie submerged dangers that are a menace to navigation. For example, in Alaska, where there are many charted and uncharted dangers, there is the famous Washington Monument Rock, a pinnacle in 650 feet of water that reaches to within 17 feet of the surface, and in New Bedford Harbor, Buzzards Bay, we have the Brooklyn Rock, a pinnacle within 18 feet of the surface, found and so named because the U. S. Cruiser Brooklyn struck it when slightly off her course in entering the harbor many years ago.

To cruise the waters of our rivers or bays in launch or small cruiser is most fascinating, adventurous, and sometimes romantic, but if one ventures any distance an accurate chart is needed. The small boat is now a popular method of travel to Florida, as there is an "inland waterway" from Norfolk to Miami; a system of rivers, bays, sounds, and canals, accurately charted, which avoids any travel whatever in the open ocean.

The Coast and Geodetic Survey is directed by Congress to chart the coastal waters of the U. S. and its possessions. In continental U. S. the shoreline of this area amounts to 53,000 miles, in Alaska 34,000 miles, in the Philippine Islands 21,000 miles and 2,500 miles in all other possessions, a total of 110,500 statute miles. To cover this coastline, the Bureau publishes a total of 802 charts on various scales according to commercial needs.

Engineering Technique in Chart Making

The nautical chart is the product of engineering technique, with many features and activities preceding its publication.

Reaching from coast to coast and from border to border of the U. S., a system of precise triangulation has been developed; this has required years to accomplish and though not quite complete, affords by astronomic observations and triangulation, the exact longitude and latitude of the stations occupied, the distance between stations, and provides precise control of the surveys needed for chart and map work in the U. S.

Leveling, to determine precise elevations with reference to sea level, has been carried forward by the engineers of the Coast Survey until a vast network of level lines spreads throughout the land. Stations so located and called bench marks form the basis for precise elevations and contouring on charts and maps.

The topography of the chart, which includes culture, drainage and contours, is obtained at present by two methods; first by plane table surveying, in which the surveyor constructs his map as he surveys, and second the photogrammetric method or aerial surveying, where photographs are made for the purpose of securing topographic details. Both methods depend upon the triangulation and leveling for proper orientation. For the aerial surveys the Coast Survey has developed and is using a 9 lens camera.

The hydrography of the chart provides the navigator with information regarding the water areas. The figures shown, or soundings as they are termed, tell him how much water he can expect at any place on the chart, the location of shoal spots, the safe lanes of travel, the natural and artificial channels, etc.

The information shown is secured through hydrographic surveying, using launches for shoal water and sea-going survey ships in deep water, linking the work with the precise triangulation stations amplified with numerous signals for control.

In the launches the hand lead is generally used to obtain depths, although this is gradually being replaced by a portable echo sounding machine which gives the depths by measuring the time it takes for a sound impulse to travel from the boat to the bottom and return. In ship work the echo sounding method is used almost exclusively. In some regions it is necessary to use a special apparatus called the "wire drag." In this method of surveying the area is swept with a submerged wire sometimes a mile long and

* To be presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Roosevelt Hotel, New York, N. Y., Feb. 17-20, 1941.

[1] U. S. Coast & Geodetic Survey, Room 1800-A, Commerce Building, Washington, D. C.

supported by buoys to any desired depth. Many important dangers to navigation have been found by this method.

The development of the uncharted areas is not without its dangers. To pioneer into the unknown waters of Alaska, and there are many areas not yet surveyed, requires care, caution, and courage; for with winds, fogs, and treacherous currents, the survey is a real man's job. Quite recently we recorded the loss, in Alaska, of a commissioned officer and a seaman by the overturning of a small surveying boat while engaged on this class of work.

An essential accessory to the chart is the compass rose with its magnetic information. The magnetic north with which the mariner and aviator deals, varies greatly, changing from a possible 20 deg. west of true north in the east, to 30 deg. east of the true north in the west, and with no measurable regularity in the change. In addition practically every locality is subject to continual change and this information is furnished on the compass rose, in such form as annual increase 5 minutes, or annual decrease 2 minutes, as the case may be.

In the study of magnetism the Coast Survey has established in nearly every county of the U. S. a magnetic station, and to further its study of magnetism and seismology, with which it is related, permanent observatories are maintained at Cheltenham, Md.; at Tucson, Ariz.; Honolulu, Hawaii; Sitka, Alaska; and San Juan, Puerto Rico; where continuous photographic records are made of the fluctuations in the earth's magnetism. An isogonic chart to show the magnetic values over the whole continent is published every five years by the Coast Survey.

Another essential accessory to the chart is tidal information. In southern waters there is little change in depths of water due to changing tides, but in the north and in Alaska, tides must be given careful consideration in timing arrival and departure at many ports. Tides of 5 to 20 feet occur in many places, while the greatest change of tide recorded is that in the Bay of Fundy, Nova Scotia, which at times rises and falls as much as 50 feet.

Some information concerning tides is printed on each chart, but full information, including the predicted time and height of each high and low water, is published each year in advance by the Coast Survey.

In predicting tides, the observations at many tide stations are used and a unique apparatus designed and built in this bureau and known as a tide predicting machine, solves the complicated formulas, which may contain as many as 37 terms, and predicts and records graphically the time and extent of the tide for any given locality for any time.

To assist the navigator by day and by night to follow the best routes and to avoid hidden dangers, a system of aids to navigation has been developed by the United States to mark channels and dangers. The more common of these aids are the buoys, beacons, lighthouses, and lightvessels. They are placed in position by the U. S. Coast Guard and are shown on the charts by conventional symbols and colors which indicate to the navigator how they should be approached or passed.

One of the modern navigational aids is the radiobeacon, a radio signal broadcast by lighthouses, lightvessels or stations set apart for sending such signal. Vessels tuning in on a particular station are able to note accurately the direction of the sending station. So close is the direction obtained that some years ago a liner in a dense fog, following the course indicated by a radiobeacon, collided with a light vessel sending the signal.

To supplement information contained on the charts, current tables and diagrams published by the Survey are available for the principal harbors of this country, and in addition the Survey publishes Coast Pilots covering the coasts of the United States and its possessions, these are books giving details regarding courses and routes, anchorages, weather conditions, harbor regulations, and other information useful to the mariner.

Besides its original activity of producing nautical charts the Coast Survey has been assigned in recent years the additional function of compiling and publishing aeronautical charts. The rapid growth of the aeronautic industry has created a great demand for these charts. Three series are published for continental United States, totalling 104 charts at present, and with two to mark a beginning in Alaska. The issue of these charts is approaching 750,000 a year.

Reproduction of Surveys

The method or means of presenting to the public the results of topographic, hydrographic, and photogrammetric surveys together with allied information in usable chart form, we term reproduction.

These materials are assembled by the cartographer into what is termed a compilation, which is the drawing of an engineer, on paper mounted on aluminum to maintain size. This drawing is very precise, but no effort is spent on its artistic appearance.

After the compilation is completed the first step in the actual reproduction by lithography is the engraving on copper or engraving on the glass negative.

The following is mainly a description of the procedure in the reproduction of the copper engraved chart. The procedure for the glass engraved chart and the aeronautical chart, which is not engraved, is somewhat similar.

In engraving on copper, the compilation is transferred to the copper by means of photographic matrices; the topography and hydrographic symbols are engraved manually, and the soundings, (figures to show the depths) are mechanically engraved on a sounding engraving machine. No lettering is engraved on the copper.

When the engraving is completed, a print from the copper plate is made on baryta paper mounted on heavy blotting paper, and on this print all lettering, from type, and symbols representing aids to navigation are pasted in place.

Wet plate negatives are then made in our precision camera, an overhead camera designed by the Coast Survey for precise work. In this camera negatives as large as 50 inches square can be made; it is of 3-point suspension and weighs 14,000 pounds. The negatives thus made are retouched, and a layout on an aluminum plate is made to control the setting of the negatives as they are assembled in the vacuum printing frame. This aluminum plate, with its control marks, is coated with an albumen solution that is photographically sensitive to light. The negatives, 8 or 9 may be required to compose the chart, are exposed to the sensitive plate and thus by what is termed process plate making, a lithographic offset printing plate is made.

A proof of this plate is made for verification of details and to indicate any additional changes. This plate is the black or base plate and contains all the

information required for safe navigation, but in order to accentuate certain features colors are used. For the land area a buff color is used, for the water area, on many charts, a blue color is used to the 18-foot curve and a ruling of the same color and on the same printing plate is used to the 30-foot curve. This produces a light blue effect. These colors of blue are used to emphasize depths up to 30 feet because in most navigating 30 feet or less is considered critical. A combination or the superimposing of the buff and the blue produces a green that emphasizes the swamp or marsh areas.

Red is used to emphasize red buoys and red sectors of lighthouses and lighted beacons and for special reference notes. Orange is used to emphasize the symbol for all lighted beacons, lighthouses, and radio-beacons. This color is also used for isogonic lines whenever they are shown on the chart, and on some Alaskan charts, the area surveyed by the wire drag method is shown in green.

These color plates are made by the lithographic draftsmen on aluminum printing plates using as a guide for location of color the red chalk facsimile of the chart put on the plate by the transfer or proving section of reproduction.

After verification of the chart and the application of any changes the plates are ready for the offset presses.

Character of Paper Important

As registration of colors is a critical point in reproduction and as durability of the chart in the hands of the user is essential, the character of paper purchased and its treatment when preparing for printing are important factors.

For the nautical chart at 100% rag paper, 86 substance, .006 inch thick with a smooth lithographic finish, is used; for the aeronautical chart, where folding is required, a thinner paper, 50% rag, substance 56, .004 inch in thickness is used.

In the purchase of these papers an attempt is made to secure a water content that will approach an equilibrium with the humidified paper storage room in which it will be stored.

Previous to its use on the press, it is placed in the paper conditioner and moisture added to perfect its condition, using the water carburetor mist system developed by Mr. Geib of the National Bureau of Standards.

In chart work an average of 5 colors are used to complete the chart.

In aeronautical charts an average of 10 colors are used with rulings and screens used to reduce the number formerly printed.

In reproduction of charts the greatest amount of work is in the revision of existing charts as every effort is made to keep the information on the chart up to date. Some charts of important areas are revised and printed 2 and 3 times a year and in the issue of the charts to the public, any changes of aids to navigation are hand corrected on the chart up to the date of purchase.

The U. S. Coast and Geodetic Survey accepts the responsibility of safe-guarding the waterways and its traditions of fidelity and service of more than 100 years, are carried forward in securing and presenting accurate information for nautical and aeronautical charts for government and public use.

TAPPI Notes

W. D. Harrison, formerly of the Riegel Paper Corporation, is now with the Ecusta Paper Company, Pisgah Forest, N. C.

Kurt Suter, formerly chemist with the Ecusta Paper Company, is now assistant paper mill superintendent at the Union Bag and Paper Corporation, Savannah, Ga.

Robert E. Burkhardt, formerly superintendent of the Iroquois Paper Company, is now general superintendent of the Schroon River Pulp and Paper Company, Warrensburg, N. Y.

L. V. Forman and Charles E. Roth have been transferred from the Chillicothe, Ohio, mill to the Kingsport, Tenn., mill of the Mead Corporation.

H. M. Grasselt, formerly of the Erving Paper Mills, is now production manager of the Collins Manufacturing Company, North Wilbraham, Mass.

H. F. McLeroy, formerly of the Union Bag and Paper Corporation, is now engineer for the Florida Pulp and Paper Company, Pensacola, Fla.

John McCrystal of the Brown Corporation, La Tuque, Que., is now manager of operations at the Berlin, N. H., mill of the Brown Company.

K. E. Youngchild has been transferred from Glens Falls, N. Y., to Mobile, Ala., in the American Cyanamid and Chemical Corporation.

A. C. Salisbury, formerly of the Fir-Tex Company, St. Helens, Ore., is now with the Paraffine Companies, Richmond, Cal.

Inter-Society Color Council to Meet

The tenth annual meeting of the Inter-Society Color Council will meet in Washington, D. C., on March 4-5, 1941. On Tuesday, March 4, the I.-S.C.C. will hold a discussion session, business meeting and informal dinner at the American Pharmaceutical Association headquarters, 2215 Constitution avenue.

On March 5 the I.-S.C.C. will meet jointly with the American Society for Testing Materials at the Mayflower Hotel. This will be a symposium on "Color —Its Specification and Use in Evaluating the Appearance of Materials." The participants will be Deane B. Judd; Francis Scofield "Color of Transparent Materials"; R. H. Sawyer "Hiding Power and Opacity"; I. H. Godlove "Color Standards for Opaque Materials"; A. E. Parker "The Spectrophotometer in the Determination of the Color of Materials" and R. S. Hunter "Photo-electric Colorimetry".

At 8 P.M. a popular session will be held on "The Parade of Color" in the auditorium of the Potomac Electric Power Company, 10th and E Streets N. W. This session will feature "Trends in Color Photography", "Paint Styling" and Herbert Thompson Strong's spectacular presentation "Exploring the Magic World of Color".

The Technical Association of the Pulp and Paper Industry is a member of the Color Council. All members of TAPPI are welcome to attend.

Sutherland Nets $813,926

The Sutherland Paper Company for 1940 reports a net profit of $313,926, equal to $2.83 each on 287,000 shares of common stock, compared with $723,190, or $2.52 a share in 1939. Net profit, in 1939, included $82,984 proceeds from a life insurance policy.

Measuring and Recording Freeness Continuously*

By Arthur B. Green[1]

Abstract

Any measurement of drainage rate will be responsive to freeness, density, and temperature. To measure freeness continuously in the mill, the stock must be uniform in density and temperature. Temperature offers no control difficulty, but density control as usually applied follows erroneous theory. Theory is discussed and carried through to application in the mill. Following that, the purpose of recording freeness continuously is discussed and the working principle stated. Methods are shown for mill application under ordinary and various exceptional conditions. The practical use of recording freeness continuously is described.

Any practical mill method of showing freeness continuously is the preconditioning of the stock. Freeness is a measurement of drainage rate. Drainage rate varies with: freeness, stock density, and stock temperature. If a stock is to be measured for freeness in the laboratory, the first step is to secure a sample, the second to reduce that sample to some uniform standard of density and temperature, and it is only then that the measurement of drainage rate in the laboratory can be accepted as a measurement of freeness. Now, in the mill, the stock runs under whatever control as to density and temperature the mill may have in force, with the result that if variations do occur there is no way of measuring freeness with any better accuracy than the stock runs uniformly to density and temperature. If the mill already controls density and temperature with precision, then it is only necessary to add means of measuring freeness and the measurements can be accepted as freeness purely. If the mill does not control density and temperature with precision, that control ought to be established, quite aside from the single matter of indicating and recording stock freeness.

Density Consideration

Not often under practical conditions does the temperature of the stock run through violent and sudden changes. If the mill processes require steaming of stock, that is a condition which may need control; but the theory involved as well as the means is well understood. We are left therefore to consider density control, for the theory is not well understood, and the practice is not always sound.

If a mill depends on batch beating for any considerable portion of the stock preparation, the place for stock density control is in the batch beaters. Only by that control can the furnishes be exact and such matters as fiber count, sizing, coloring, and loading come within precision limits. By that control the batch beaters can have uniform repeats of stock on which to apply their beating action. Only by that control can the way be cleared for anything like uniformity in the subsequent processes and in the product. A mill which controls stock density in the batch beaters has little trouble carrying that control forward and has no need for what is called a consistency regulator following the beaters. A mill which does not control stock density in the batch beaters, and instead of getting that control installs a consistency regulator further on, is trying to smooth out an unnecessary error after it has been committed and still is leaving out of acount a number of related errors that make consistency regulators inaccurate and make paper machine operation uncertain and the final product nonuniform. When batch beating is out of control as to stock density, it is bound to be out of control as to stock treatment also, and a stock coming to a consistency regulator varying in such factors as fiber length, furnish, freeness, and hydration will prevent any consistency regulator from doing its work.

There are mills where batch beating accounts for a negligible amount of stock preparation, and other mills were there is no batch beating. Here, if stock is to be density regulated it must be regulated in a slush line. We may approach our consideration of that by first seeing our way clearly through a rather simple, if neglected, theory.

Theory of Control

Suppose GR (Gentle Reader) undertakes to drive a female bovine (FB) in a perfectly straight path going due north. FB is not aware of the wishes of GR, and if she were it would be quite beyond her nature or desire to comply. Which makes FB a perfect embodiment of the characteristics of stock running through a slush system in a mill. Things start off with FB exactly on the path and GR also on the path directly south of her, both heading north. Without reason or warning, FB swerves to the east, and thereby raises with GR the problem how to counteract that eastward swerve and get FB back on the straight path. If GR also swerves eastward, but not as much as FB has swerved, he drives her still further off the straight northerly path toward the east. If GR makes exactly the same eastward swerve as FB, he keeps himself exactly due south of FB all through the maneuver, and might succeed in heading FB northward, but he would not get her back on the original path, which is what he is resolved to accomplish. GR's remaining choice is to swerve to the east further than FB. He then positions himself not south, but east of south, with reference to FB, and is in line to head her back toward the straight path on which he started her, and on which he intends to keep her.

But FB now approaches the original path heading somewhat west of north, and unless something happens she will cross the straight path toward the west. GR, using his head, foresees this, but if he swerves westward too fast, he will change FB's course before she reaches the original path, and instead of getting her on it, he will keep her to the east of it. There is

* To be presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Roosevelt Hotel, New York, N. Y., Feb. 17-20, 1941.

[1] Member TAPPI, Engineer, 284 Harris Ave., Needham, Mass.

no hope of getting her on the predetermined path without allowing her to reach it from her eastward swerve, which means that she will cross it and swerve westward. Now GR's problem has repeated itself, only in reverse. So experience soon demonstrates the impossibility of keeping FB right on the line every step of the way, and GR settles down to the next best thing which is to keep the deviations as small as possible and equally distributed as between east and west. GR finds, in short, that he can achieve a good average, good enough, if he is alert, to follow the line exactly, but not continuous perfection.

GR learns too what it requires of him. Every swerve of FB he must match by a somewhat faster swerve of his own in the same direction. To achieve the most precise result, he must cover somewhat more ground than FB, and keep her constantly changing direction and doing it correctively. GR finds that just matching FB's error is not enough. Especially is this driven home to GR when he realizes that every act of his must follow, and cannot precede, the devious act of FB which it is his job to correct, and he discovers that because he must start every corrective after the error to be corrected has started, his correctives must move fast enough to overtake the error, and must continue until the error is headed off and starts back toward the norm. But having got that lesson, GR finds that he can overdo it. He can drive FB back across the line so sharply that she will develop a swift deviation on the other side, perhaps beyond GR's ability to overtake it. So the matter calls for adjustment which means gaging the correctives to meet the errors with the least allowable deviations. If FB swerves fast, GR must swerve just a bit faster; if FB swerves slowly, GR must swerve slowly too but still a bit faster than FB.

Theory Applied

To put up in mechanical design the lessons which GR learns produces something quite apart from any of the commercial consistency regulators, and any consideration of design will indicate the advantage in cost and accuracy of treating it as an engineering matter in each mill. Common to all the commercial consistency regulators is some way of registering the stock fluidity, since this, assuming uniform average fiber length, freeness, and hydration, runs inversely as the stock density. From that point on, the commercial units divide into two groups: one group positioning a diluent water valve in proportion with stock fluidity, the other moving a diluent water valve at some set rate in one direction or the other as the stock fluidity may determine. Neither the proportional valve positioning nor the set rate of valve movement suffices to make the corrections dependably. Proportional valve positioning is as if GR should position himself at some fixed compass bearing with relation to FB, eastward or westward as the case might be, no matter how fast FB happens to be deviating. Moving the valve at some fixed rate is as if GR should limit himself to some fixed rate of deviation when trying to head off a deviation by FB which may be fast or slow, wide or narrow.

What the case requires is a unit that will move the valve, not just position it, but move it at variable rates depending on the rate of deviation which is to be corrected and its amplitude. If stock fluidity goes rapidly down, quickly reaching a point far below the norm, the diluent water valve must move toward open fast, and keep moving until it succeds in turning the stock fluidity back upward toward norm. If, however, stock fluidity moves off norm but a little, the valve must likewise move less and move more slowly.

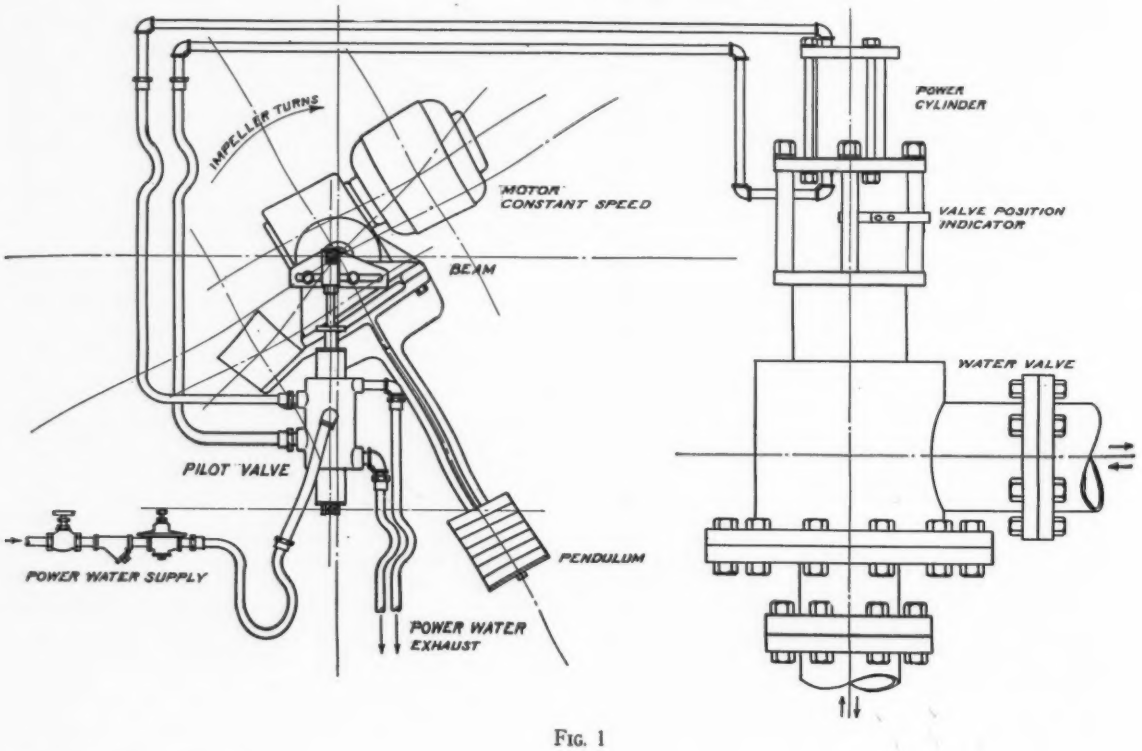


FIG. 1

That will result in meeting contingencies as they arise and will bring to the task everything that GR has learned by experience with his cow-driving parable.

One way to meet these requirements mechanically appears in Fig. 1. Here a pendulum and beam indicate the stock fluidity by showing the torque necessary to turn an impeller in the direction indicated at constant speed, the impeller submerged in stock under substantially constant pressure. The pendulum and beam are drawn as if showing the norm of stock fluidity. When stock fluidity drops, density has risen, and the pendulum moves outward from norm toward the right. When stock fluidity rises, stock density has dropped, and the pendulum moves inward from norm toward the left. If this movement of the pendulum backward and forward were coupled directly with the diluent water valve, it would take some of the force of the movement to move the valve, and this resistance would reduce the sensitivity of the device. However, a pilot valve is pivoted at a short distance off center of the pendulum and beam and is made to work with balanced flow directions inside, so that it requires almost no force at all to operate. Through such a pilot flows water or air from an admission supply line regulated to some low convenient pressure, such as about 20 pounds per square inch. The pilot valve is positively connected to the beam and is double acting. If the beam tips from norm to raise the pendulum to the right, the pilot is positioned in exact proportion, and admits pressure fluid to one end of a power cylinder, at the same time and proportionally exhausting it from the other. The result is to move a piston which drives the valve toward open, increasing the rate of admission of diluent water to stock at a certain rate of increase. The diluent water valve moves at a rate which is proportional with the amount of movement of the pilot valve. Thus, every position of the pendulum and beam determines, not a position of the diluent water valve, but a rate of movement. If the pendulum moves far off norm, the diluent water valve moves fast; if the pendulum moves slightly off norm, the diluent water valve moves slowly.

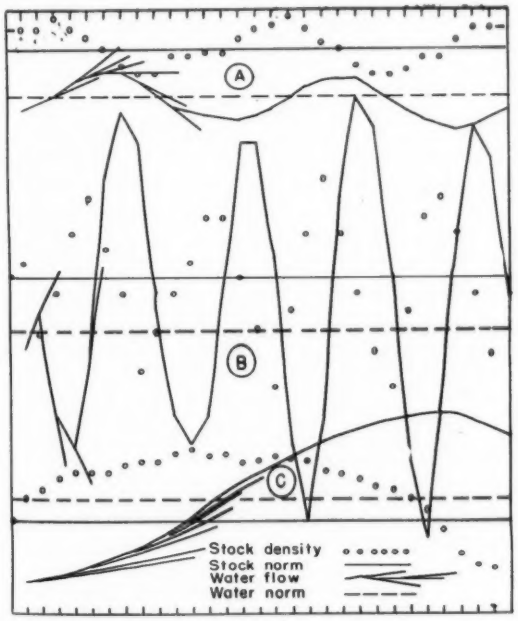


FIG. 2

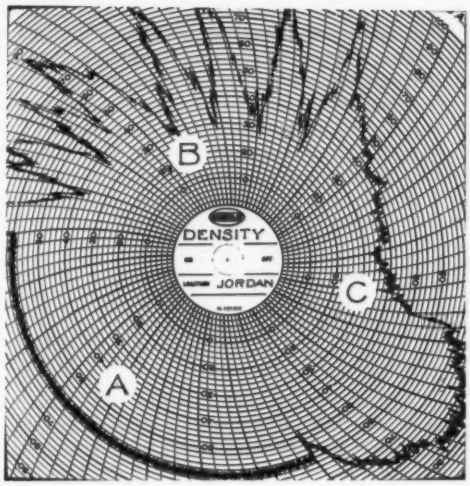


FIG. 3

Control Charts

The plotted action of this principle is shown in Fig. 2. Here the assumption is that stock density manifests itself at isolated points, disconnected as to time, to simplify the argument. Each point of stock density, then, entails a rate of change in the diluent water flow, which shows up as a slope in the water flow curve. In order to bring out that fact, these slopes have been extended for a few instances at the beginning of each water flow curve. Immediately it appears that the slopes are changing least in curves C, most in the curves B, and intermediately in the curves A. What appears from that is that in the C curves, where the slopes are too slightly changing, it takes too long for the correctional water flows to develop, and the stock densities are allowed to wander far from norm over long periods of time. When correction does finally take effect, the stock densities move toward norm with increasing speed, and cross the norm sharply without lingering. The result is that when slopes change too slightly there is never a time when stock densities stay near their desired norm, and there is no effective control. But it is equally bad when the slopes change too much, as appears in the B curves. Here the water flow overcompensates for stock densities so radically that the densities waver back and forth violently and go through wide amplitudes. They are on or near the norm oftener than in the C curves, but their fluctuations do not give control. But there is some degree of slope change that will send stock densities back and forth across the norm, never allowing a big deviation, and tending to linger when at or near the norm. That is the condition shown by the A curves.

Some technicians believe that automatically recording stock densities is comparatively novel. Actually we have been recording stock densities automatically since 1914. From a chart that might be so produced, drawn to show the same differences of adjustment as have just appeared in Fig. 2, the corresponding curves would appear as in Fig. 3, where each type is assumed to run for 8 hours. Such a chart record

shows at once whether the unit is in proper adjustment, and if it is not the chart also shows which way the adjustment is off. It is the A curve that denotes effective control. The adjustment that gives the best slopes, that is, the best rates of travel for the diluent water valve, has to be found for each case. When properly made, the result may be stock densities running uniform within variations of .02 to .05%.

This consideration of stock density control may end with the two chief adjustments. If the pilot valve (Fig. 1) is pivoted close to the center of rotation of the beam, the slopes of water flow curves (Fig. 2) will be slight, and the effect will be like the C curves of Figs. 2 and 3. This is what the control instrument makers refer to as drift. If the pilot valve is pivoted far from the center of rotation of the beam (Fig. 1), the result is as given in the B curves of Figs. 2 and 3, and that is what the control instrument makers call "cycling." Somewhere between the two is the adjustment that will give the optimum control under the conditions presented in any given case. As to the pendulum, if the selected norm position is to give a high stock density, the pendulum weight is heavy. If the same norm of position is to give a thin stock, the pendulum weight is light. The diluent water valve can be as large or small as the case requires, and can operate under any pressure that suits the mill. The force needed to operate the valve takes nothing away from the sensitivity of the unit.

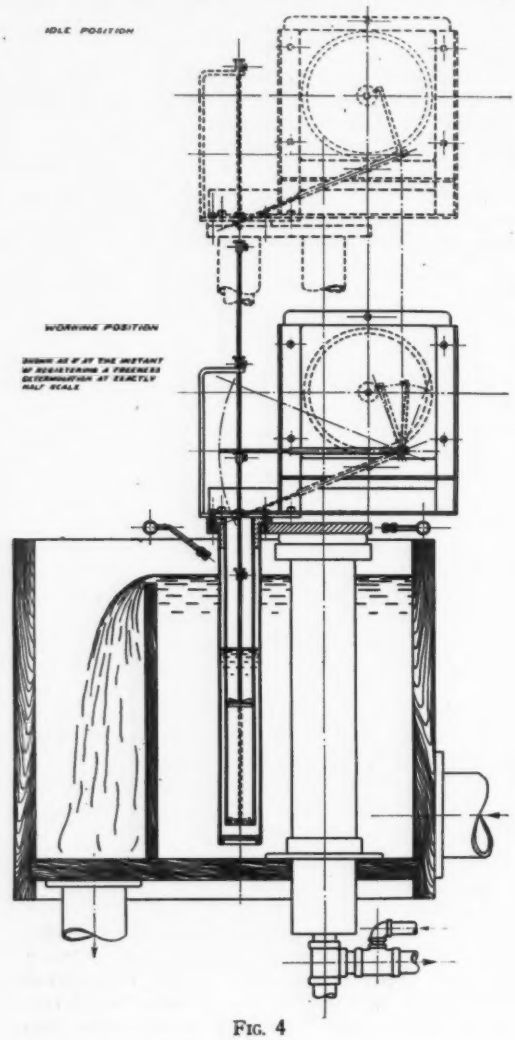


FIG. 4

Freeness Measurement

If the stock is taken care of as to density and temperature, it is ready for the continuous measurement of freeness as it passes through the mill, without recourse to special tests. To accomplish this, the stock will be measured for freeness, not at some special density of a fraction of 1%, but at whatever density the mill uses, provided that the mill density runs not below about 2%. It follows from that condition that any freeness measuring device will require more screen area in relation to the volume of the sample than a laboratory test will require, if the sensitivity is to be the same or better. Putting those two things together, it will appear at once that the scale of measurement will not be the scale for any of the laboratory freeness tests. The scale will be an arbitrary one, as arbitrary as the Fahrenheit or the decimal scales, but it will show freeness differences with precision, and will convert to any other scale of freeness through a conversion table or chart made for the stocks which the mill is using, and such conversion ratios are easy to find.

Purpose of Freeness Measurement

Recording freeness continuously serves one of the purposes of management, which is to have all men concerned know what is happening to the materials of manufacture while going through the processes of manufacture. In the case of papermaking materials, freeness is an important fact to know. Burst, fold, tear, tensile, stretch, shrinkage, pliability, bulk are among the other factors. Duplication of freeness does not bring duplication in any of the other factors by itself, so freeness cannot be read alone as the one control variable in papermaking; but so closely is freeness related with possible machine speeds, drying capacities and formations, that no papermaking is under control where freeness is not controlled.

If freeness, with its fluctuations, is continuously in plain sight of the operator, and comes after the continuous stock-treating units (such as jordans) which the operator is running, then the operator may receive precise freeness specifications for every order to be made. If the continuous freeness indications are automatically charted, then the operator can submit a daily report showing the freenesses of the product during manufacture. His report shows just how closely he ran the freenesses to the specifications which he received in advance. If the recorded freenesses are accumulated, they provide definite information of use when running down difficulties and imperfections in the mill and when investigating customer complaints, besides offering the basis for progressive refinements in manufacture through better and better freeness specifications. When the occasion arises for making a new grade, or using a new stock to make an old grade, the accumulated records point with great accuracy to the new specifications that should be drawn, and protect the mill from a good deal of unnecessary guesswork.

Finally, it will be possible, though it has not yet been actually done, to couple continuous freeness measurements to the adjusting mechanism of the jordans or other continuous machines so as to operate them mechanically in response to stock freenesses, so as to maintain the delivered freenesses within any

desired tolerance of a predetermined specification. On the experimental scale and within shop conditions, this has been carried out.

Working Principle

Figures 4 and 5 show a specimen installation of the working principle that applies in all installations. In Fig. 4 a common form of constant level flow-box is shown, with slush stock entering at the right, overflowing a dam, and discharging at the bottom left. Together with uniform stock density and temperature, there must be a constant level of flow. Such a box must be made with due regard for the mill and its operations, with a width of dam sufficient to keep the stock level constant within variations of not over one half inch, and with due regard for the kind of stocks run, so that there will not be surge, blowing, or dead places.

Standing on the floor of the box is a cylinder projecting below the floor. Telescoping into this cylinder from above is a ram which carries at its top a platen. The ram moves up and down. The top position is in dotted lines; the bottom position in solid. On the platen is mounted the testing cylinder, projecting downward from the platen to the left of the cylinder and ram, and the recorder. First, the ram slowly rises, carrying testing cylinder and recorder with it, to its top position. Next, the ram suddenly descends, at a predetermined speed, to its bottom position, immersing the testing cylinder to a fixed depth in the stock. Immediately the testing cylinder goes through an automatic patented cycle of operations performing the freeness test. Allowing plenty of time for completion of the test, the ram again starts its slow rise to the upper position, while a series of light flat sprays play against the sides of testing cylinder and ram. This rise and descent of the ram repeats at regular intervals, say every 5 minutes throughout the 24 hours.

In the lower position (solid lines), the testing cylinder appears in vertical section. It consists of 2 cylinders, the outer being a screen with closed bottom, formed of a standard perforated sheet metal. The inner cylinder is solid-walled and extends downward not quite to the bottom of the screen. Running in this inner cylinder is a light spinner, provided with adjustable openings through it. These conveniently take the form of louvres, and the openings are increased or decreased in size by bending the metal. The spinner carries a light spindle running to the top of the instrument, with two buttons properly positioned on it. The top button is positioned to fix the zero limit of motion downward; the lower button is positioned to engage a lever on the recorder at the right distance to bring the recorded freenesses on the chart scale.

By fixing the amount of opening through the spinner, the spinner and spindle together are given a fixed speed of descent through a column of water within the inner cylinder. That is the calibration. Immediately, when the testing cylinder is immersed, water enters from the stock through the screen, leaving a fiber mat on the outside. This water can reach the inner cylinder only at the bottom. It then rises within that cylinder at a variable speed, beginning swiftly, and then diminishing in speed. Meanwhile, the spinner and spindle are descending through this rising water at the speed which has been predetermined by the calibration. An instant comes when the upward speed of water has diminished to exactly equal the downward speed of spinner and spindle through water. At that instant, the spinner and spindle cease rising with respect to the cylinder, and begin a slow descent. It is this instant which furnishes the freeness determination. If the spindle has risen high, the stock is free; if it has risen less, the stock is slower. All of which assumes that the stock is uniform in density and temperature, and runs to constant level.

The spindle, rising, brings up the engaging button, and lifts a light, nearly balanced, lever, which in turn moves the pen across the chart of the recorder in exact proportion with the degree of rise of the spindle. The recorder pen draws a line radiating outward from the chart center, the longer the line the freer the stock, the shorter the slower. One such line appears for every cycle of the ram, which is at

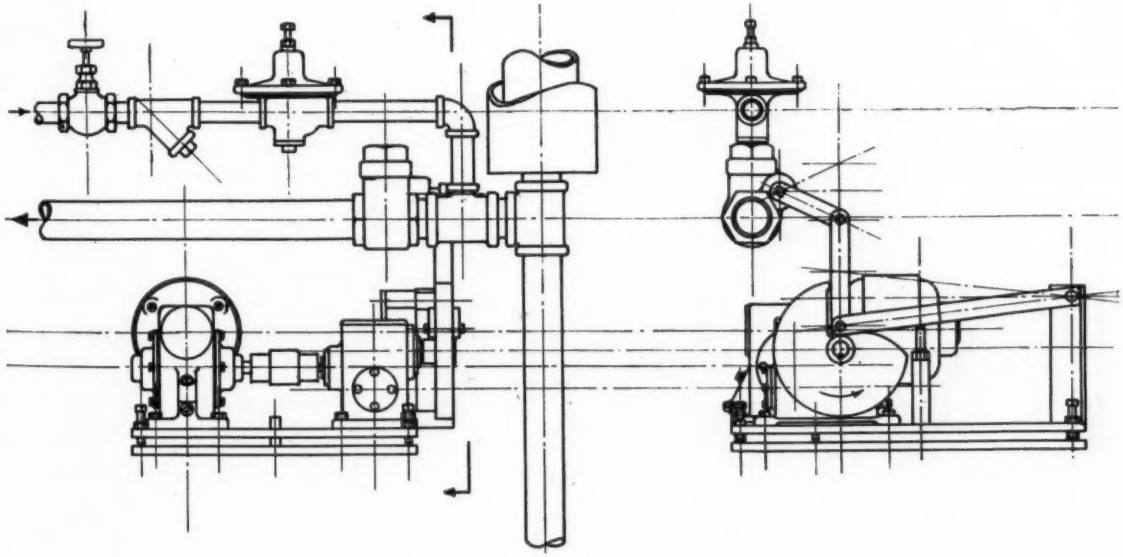


FIG. 5

regular time intervals, say every 5 minutes throughout the 24 hours.

The Most Convenient Way

There are unlimited ways of causing the testing cylinder and recorder to rise and descent as required, mechanical, magnetic, pneumatic, hydraulic. Most convenient is the way presented in Fig. 5, which might be either pneumatic or hydraulic. In the center appears the bottom of the lift cylinder which projects downward from the floor of the constant level flowbox, the cylinder into which the ram telescopes at the top. A tee connects at the bottom, joining the bottom of the cylinder to a stanchion reaching to a mill floor, to steady the unit against sway. Looking to the left, the tee also connects with a reducing tee, into which enters the supply water (or air) through a hand valve, a strainer, and a pressure regulating valve. To the left of the reducing tee is a lever-operated gate valve leading to exhaust. The right-hand view shows under this gate valve a cam turning counterclockwise under the drive of a constant speed electric motor, through a train of speed-reducing gears. This cam makes 1 revolution for every repeat of the cycle of the ram, that is, say, 1 revolution every 5 minutes. During the dwell portion of the cam, the gate valve lever is held up, keeping the gate valve closed. Water (or air) then enters the lift cylinder, lifting the ram to its top position, holding it there. When the drop of the cam comes round, the lever suddenly is tripped, the gate valve instantly opens, the fluid is exhausted from the lift cylinder, and the ram makes its descent. The gate valve may open full or part way, according as the adjustment is set which appears under the anchor link of the lever system, and the speed of the ram's descent is adjusted and fixed by the amount of valve opening. Should that speed not be constant and uniform, the readings would not reflect freeness purely. Likewise, by the amount of opening of the hand valve in the supply line is the ram's speed of ascent fixed.

In ordinary kinds of stock, if the speed of the ram's ascent is not too fast, the water impounded within the screen of the testing cylinder flows back outwardly through the screen perforations, washing off the fiber mat, and leaving the screen clean. But there are stocks which are sticky, and there is always the possibility of accidental spatter when handling any slush stock; so a little system of fine flat sprays is arranged to play on the testing cylinder and on the ram to be sure they are kept wet and clean. It is in part the matter of cleaning that has limited the usefulness of other attempts to record freeness continuously, and failure to keep the surfaces of the instrument from accumulating deposits has often been the cause of failure. Continuous freeness recording proceeds for long periods of time without needing a special cleaning. When cleaning needs to be done, or in case of damage by accident, there is a spare testing cylinder to slip in through the platen to replace its mate, kept calibrated to the standard adopted for the mill. The change requires fifteen minutes. If the calibrations and exchanges are checked at weekends, there is always trouble-free freeness recording for the operating days.

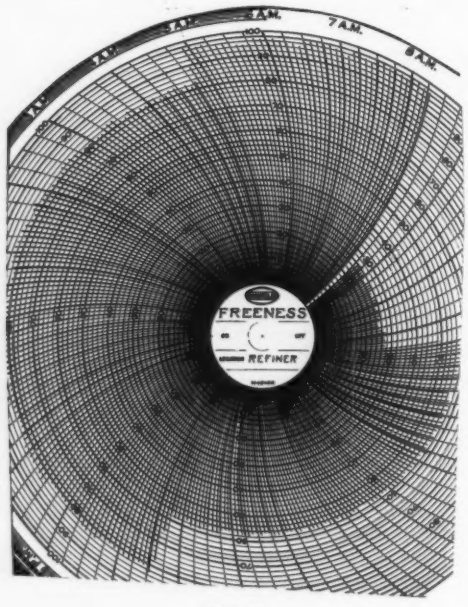


FIG. 6

Adaptability

This working principle is open to many adaptations to meet space limitations and other requirements peculiar to different mills and different stocks. Using the convenient lift cylinder for the ram motion, the cylinder can be inside the constant level flow box or outside, above or below. Its position entails nothing more than a corresponding design of platen and some attention to packing or seals. The testing cylinder will be long if intended for thick stocks, short if intended for thin. It will be wide, with inner cylinder perhaps double-walled, if intended for extremely slow stocks, such as glassine, condenser, parchment. Within any of the broad classes of stocks, the spinner will have a fast calibration for stocks of the freer range and a slow one for stocks of the slower range. By setting the recorder close to the spindle, less of the total spindle motion will come within the limit of the chart scale; more will come within it by setting the recorder far from the spindle. If the freeness differences are small, the lower spindle button can be set low, leaving only the very upper reaches of spindle motion to be communicated to the chart. Once all these factors are decided, and the unit put in operation, the freeness scale is fixed, and the mill can go ahead making up conversion charts if it is desired to reduce continuous freeness readings to the units of the Canadian standard.

Specimen Record Chart

A specimen record chart is shown in Fig. 6. This is drafted from actual chart records, to free it from evidences of mill handling and to combine on one chart a succession of freenesses that actually occurred on a succession of days. There is a line radiating from center every 5 minutes of time, the longer the line the freer the stock, the shorter and slower. This chart therefore would indicate three changes of freeness during the 24 hours.

The machine tender, when he can talk freenesses with his jordan operator in a common language of impartial units of measurement, gains in confidence as he witnesses his jordan operator's ability to run to a freeness line, and steps up his speed and production as soon as he feels that there will not be any more freeness fluctuations to guard against.

Imports of Paper and Paper Making Stock

Giving Manifests of New York, Boston, Philadelphia and Other Ports of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard; Bleached Sulphite More Acute—Some Grades of Old Waste Lower.

Effective September 30, 1939, under Treasury Decision 49,970, all publications, exchanges and trade associations, were denied access to import manifests at the New York Customs House. The Paper Trade Journal and other interested parties have vigorously protested this ruling, and as soon as the order of the Treasury Department is modified or rescinded, full publication of all manifests will be resumed in these columns. In the interim, the Paper Trade Journal is making every possible effort to gather all available information from manifests, at various outside sources.

NEW YORK IMPORTS

WEEK ENDING FEBRUARY 8, 1941

SUMMARY

Newsprint .....4,608 rolls.
Miscellaneous paper.....4 bls., 162 cs.

NEWSPRINT

——, ——, Liverpool, N. S., 4,608 rolls.

MISCELLANEOUS PAPER

Japan Paper Co., ——, Kobe, 36 cs.
Elliott Addressing Machine Co., ——, Kobe, 8 cs.
National City Bank, ——, Kobe, 54 cs.
Pan Pacific Importers, Ltd., ——, Kobe, 4 bls.
Corn Exchange Bank Trust Co., ——, Kobe, 64 cs.

RAGS, BAGGINGS, ETC.

W. Steck & Co., ——, Buenos Aires, 57 bls. old white rags.
Richard Shipping Co., ——, Santos, 6 bls. rags.
M Granatstein & Son, ——, Buenos Aires, 11 bls. paper stock.
S. Godfrey & Co., Inc., ——, Buenos Aires, 28 bls. knits.
M. Sigal & Son, ——, Buenos Aires, 17 bls. knits.
W. Intner & Co., ——, Bombay, 500 bls. cotton waste.
Chemical Bank Trust Co., ——, Bombay, 180 bls. cotton waste.
Camden Fibre Mills, ——, Bombay, 100 bls. cotton waste.
Padawer & Co., ——, Bombay, 350 bls. cotton waste.
Atlas Waste Manfg Co., ——, Havana, 43 bls. cotton waste.

OLD ROPE

W. Steck & Co., ——, Cristobal, 30 bdls.

SKIN GLUE

——, ——, Buenos Aires, 270 bags (ground).

CASEIN

American British Chemical Supplies, ——, Buenos Aires, 2,250 bags.
Chase National Bank, ——, Buenos Aires, 1,668 bags.
——, ——, Buenos Aires, 1052 bags.
American Cyanamid & Chemical Corp., ——, Buenos Aires, 417 bags.

LOS ANGELES IMPORTS

WEEK ENDING FEBRUARY 8, 1941

——, ——, Osaka, 4 cs. paper.
——, ——, Kobe, 5 cs. hanging paper.
——, ——, Powell River, 197 pkgs. newsprint.
——, ——, Auckland, 1 cs. blue print paper.

A. J. Thompson to be General Manager

A. J. Thompson took over his duties as general manager of the General Cellulose Company, Inc., of Garwood, New Jersey on February 1, 1941.

In 1925 Mr. Thompson became superintendent of Union Mill at Bancroft, Mass. owned by Bulkley Dunton & Co., then just going into the making of cellulose wadding. D. C. Taggart, president of the General Cellulose Company, Inc., instrumental in getting the mill started on this grade and selling the output, worked with Mr. Thompson in learning the ups and downs of this then new product of the paper machine and methods of converting into various commercial items.

About ten years ago Mr. Taggart started the General Cellulose Company, Inc. while Mr. Thompson continued at Union Mill. Eventually the mill was changed over to facial tissue when the mill name was changed to Federated Mills under the control of Joseph Englander, formerly with the National Cellulose Company. More recently Mr. Thompson has been superintendent at the Utica Mill of the Sitroux Company.

Mr. Thompson is particularly suited for his new responsibilities bringing with him some fifteen years of experience in the manufacture and conversion of the two products in which The General Cellulose Company, Inc. specialize—cellulose wadding and facial tissue, as well as renewing a business association of many years.

Boston Office Wins Sales Marathon

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., February 3, 1941—The Boston office of Carter, Rice & Co., Corp., won the Sales Marathon Cup for 1940, for the first time since 1929. Since that year, the cup has been held by the San Francisco, Portland, Ore., Seattle and New York offices.

A party was held at the Boston office January 25, for a formal acceptance of the cup by Frank Winter, sales manager of the fine paper division, and Jack Halkyard, sales manager of the wrapping paper division.

G. H. Cryan to Manage Kelley Corp.

Mrs. Herbert T. Kelley, president of the Kelley Paper Corporation of Bellows Falls, Vermont, announces that, due to the death of the late Harold F. Kelley, George H. Cryan will be the acting general manager.

Mr. Cryan has been with the corporation for the past fourteen years and previous to that time was with the International Paper Company for nineteen years.

Lawrence B. Kelley will come into the organization within the next few months. Mr. Kelley has a degree in chemical engineering and in pulp and paper technology from the University of Maine.

New York Paper and Pulp Market Review

Paper Demand Reported Moderate To Good As Indications Point To Pick Up In Spring Sales—No Important Change In Demand Or Prices of Pulp—Rag and Old Waste Paper Markets Unchanged.

Office of the PAPER TRADE JOURNAL,
Wednesday, February 12, 1941.

Demand for many grades of paper and paper products is rather slowly improving with current volume moderate to good according to reports received from many manufacturers' representatives, jobbers, and general paper merchants during the current week. The increase in the consumption of paper, and many kinds of consumer goods, closely follows the trend of general business activity, which is steadily advancing.

This is indicated by the index of general business activity which rose to 122.5% for the week ended February 1, from 122.1% for the preceding week, compared with 106.9% for the corresponding week last year.

Paper production of 232 mills for the week ended February 1 was estimated at 86.1%, compared with 90.0% for 1940, with 80.7% for 1939, with 67.1% for 1938, and with 88.1% for the corresponding week for 1937.

Paper board production for the week ended February 1 was 79.0%, compared with 72.0% for 1940, with 66.0% for 1939, with 59.0% for 1938, and with 86.0% for the corresponding week for 1937.

Sales of paper in the wholesale market are reported in some quarters of the trade to average about 2% higher on some lines the first of the current month, compared with a rise of about 9% in general retail sales, which includes all merchandise. In January sales in general, and in paper, showed the normal seasonal decline in the first part of that month, with a rather slow increase to date. The relative high price level of pulp compared with the low price level of paper, is generally viewed in the industry as an unusual situation. In view of the probability that less Scandinavian pulp may be received here in 1941 than during last year, the only adjustment that appears feasible is to revise paper prices moderately upward. If this difference in pulp and paper prices is not adjusted, some paper manufacturers assert, curtailment of paper production must be made by some of the so-called high cost mills. On the other hand, others assert, consumer demand is not of sufficient volume to bring any substantial benefit through an increase in paper prices. The great upheaval in international trade is making it difficult for all nations to keep trading within reasonable balance.

Despite this abnormality, the demand for paper and paper products is forecasted to steadily expand. The tone of the markets are stronger at this date, with indications of a moderate increase in many paper lines. Sales in the main divisions of the industry, particularly in kraft wrapping, book, and paper board are reported this week as somewhat improved. No important change from prevailing market quotations has been reported to date.

Mechanical Pulp

Demand continues good in standard grades of mechanical pulp. The trend of production is reported to be steadily upward. Prices are firm and unchanged.

Chemical Pulp

No important change has been reported in the chemical pulp market this week. Prices are unchanged and while the current quotations for the higher grades of chemical wood pulp are high in comparison with paper prices, supplies of most grades are adequate, according to some quarters of the trade. The situation in reference to the supply of prime grades of unbleached sulphite and northern kraft continues to be a matter of concern and, according to some quarters of the trade, is likely to become more acute this year than last year.

Bags

Mill buying of a few grades of new cotton rags continues to be reported moderately good. Prices continue unchanged on all grades, excepting on new white No. 1 shirt cuttings, which are lower and currently quoted at from 6.38 to 6.53. The tone of the whole market is steady.

Old Rope and Bagging

Old Manila rope continues in a strong market position, with somewhat less mill buying at this date. Prices are firm and unchanged on all grades of new rags, with some soft spots reported in the lower grades.

No important change has been reported in old bagging this week. Prices are firm on account of limited and uncertain shipments of new bagging. No important change from prevailing market quotations has been reported this week.

Old Waste Paper

The lower grades of paper stock continues to reflect firmness, with other grades rather soft and otherwise unchanged. No important change from prevailing market quotations has been reported on any grade of old waste paper this week.

Twine

The twine market is moderately active with sales improving in some grades, according to trade reports. No important change from prevailing market quotations on any grade of hard or soft fiber twine has been reported at this date.

Rayonier to Exhibit

Rayonier Inc. will have an interesting exhibit of wood pulp and products made from wood pulp in Suite 5 R & S, at the Waldorf-Astoria Hotel during Convention Week. T. R. Wilbert, F. B. Steig and F. M. Sherman, will be in attendance to greet their friends and all convention visitors.

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February 17-20 inclusive

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The Harrington & King PERFORATING CO.

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***BECAUSE** of its remarkably pure and uniform white color Witco Blanc Fixe is winning wide favor in the paper industry. More and more manufacturers are standardizing on it as the completely reliable Blanc Fixe for use in products where uniform opaqueness of coating is*

an important property. Advantageous, too, it's the absence of free alkalinity or acidity, achieved by the unusually rigid methods Witco employs to control its neutrality. The result is that it may be used with confidence in the production of papers for a great variety of purposes. You are invited to send for trial quantities and make tests in your processes. Witco Blanc Fixe is available in 50 and 100 lb. bags and 700 lb. barrels.

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New York, 295 Madison Ave. • Boston, 141 Milk St. • Chicago, Tribune Tower Cleveland, 616 St. Clair Ave., N. E. • Dallas, Texas, 610 Dallas National Bank Building • Witco Affiliates: Witco Oil & Gas Company • The Pioneer Asphalt Company • Panhandle Carbon Company • Foreign Office, London, England

BUY DIRECT AND PROFIT DIRECTLY

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, February 12, 1941.

BLANC FIXE—Quotations on blanc fixe are firm and continue unchanged at prevailing market levels. Demand reported fair for the week. The pulp is currently quoted at $35 per ton, in barrels, at works; the powder is offered at $50 per ton, f.o.b., works.

BLEACHING POWDER—Prices on bleaching powder are firm with demand reported good for the week. Bleaching powder is currently quoted at $2 per 100 pounds, in drums at works.

CASEIN—Quotations on casein are reported firm. Demand moderate for the week. Standard domestic casein, 20-30 mesh, is currently quoted at 13 cents per pound; 80-100 mesh, at 13½ cents per pound; all prices in bags, car lots. Standard Argentina casein is currently offered at 12½ cents per pound. No quotations on French casein.

CAUSTIC SODA—Prices on caustic soda are unchanged. Shipments continue in moderate volume. Solid caustic soda is currently quoted at $2.30 per 100 pounds; flake and ground at $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—Quotations on china clay are firm and continue unchanged this week. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay at from $12 to $22 per ton, at mines. Imported clay is quoted at from $13 to $25 per long ton, ship side.

CHLORINE—The demand for chlorine is reported good. Prices are firm and the market strong for the current week. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The rosin market is reported as firm with prices little changed for the week, "G" gum rosin is currently quoted at $1.62 per 100 pounds, in barrels, Savannah. "FF" wood rosin is currently quoted at $1.63 per 100 pounds, in barrels, New York. Seventy per cent gum rosin is quoted at $2.38 per 100 pounds, f.o.b., works.

SALT CAKE—Prices on salt cake are firm under a good demand with current quotations continuing nominal. Domestic salt cake is currently quoted at $17 per ton in bulk; chrome salt cake at $16 per ton. All prices in car lots, f.o.b., shipping point. The quotation of $16.50 per ton on imported salt cake continues nominal.

SODA ASH—Quotations on soda ash are firm and continue to conform to prevailing market quotations. Demand reported moderate. Quotations on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are firm and continue unchanged for the current week. Pearl is currently quoted at $2.95 per 100 pounds; powdered starch at $3.05 per 100 pounds; all prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Shipments reported steady for the week. The commercial grades are currently quoted at $1.15 per 100 pounds; iron free at $1.60 per 100 pounds, in bags, car lots, f.o.b., works.

SULPHUR—Prices on sulphur are firm and continue to conform to prevailing market quotations. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $19 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mills. No quotations on imported talc.

MARKET QUOTATIONS

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	"	—
Kraft—per cwt.—Delivered Zone A			
Northern, Extra Quality	$5.25	@	$5.75
Superstandard	4.87½	"	5.25
Northern Standard Wrapping	4.37½	"	4.62½
Standard Wrapping	4.25	"	—
Tissues—Per Ream—Carlots			
White No. 1	.97½	"	—
White No. 1 M. G.	.95	"	—
White No. 1¼	.80	"	—
White No. 2	.75	"	—
Anti-Tarnish M. G.	.80	"	—
Colored	.85	"	—
Kraft	.87½	"	—
Manila	.77½	"	—
Unbl. Toilet, 1 M.	3.75	"	—
Bleached Toilet	5.26	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.10	"	—
Bleached, Jr.	3.60	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	8.25	@	10.25
No. 1 Manila Wrapping, 35 lb.	5.25	"	—
No. 2 Manila Wrapping, 35 lb.	5.00	"	—
Boards, per ton—			
News	35.00	@	40.00
Chip	35.00	"	40.00
Sgl. Mla. Ll. Chip	52.50	"	55.00
White Pat. Coated	65.00	"	67.50
Kraft Liners	55.00	"	—
Binders Boards	73.00	"	80.00

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers	
100% Rag Ext. No. 1	$39.10 @ $46.00		$40.25 @	$47.25
100% Rag	31.05 " 36.50		32.20 "	37.75
85% Rag	" "		29.90 "	35.00
75% Rag	23.60 " 27.75		24.75 "	29.00
65% Rag	" "		21.65 "	26.25
50% Rag	17.55 " 21.50		18.70 "	22.75
25% Rag	14.65 " 17.75		15.80 "	19.25

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds		Ledgers	
No. 1	$9.35 @ $11.50		$11.55 @	$12.75
No. 2	8.50 " 10.25		9.65 "	11.75
No. 3	8.05 " 9.25		9.20 "	11.25
No. 4	7.70 " 9.50		8.90 "	10.75

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper.

Delivered in Zone 1:

No. 1 Glossy Coated	$11.90	@	$13.50
No. 2 Glossy Coated	10.35	"	11.75
No. 3 Glossy Coated	9.55	"	11.00
No. 4 Glossy Coated	9.15	"	10.50
No. 1 Antique (watermarked)	9.05	"	10.50
No. 2 Offset	8.40	"	9.75
A Grade E. F.	8.20	"	9.50
A Grade S. & S. C.	8.45	"	9.75
B Grade E. F.	7.65	"	8.75
B Grade S. & S. C.	7.90	"	9.00
C Grade E. F.	7.35	"	8.50
C Grade S. & S. C.	7.60	"	8.75
D Grade E. F.	7.10	"	8.25
D Grade S. & S. C.	7.35	"	8.50

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—	
Moist	No prices
Dry	No prices

(Delivered)

No. 1 Domestic and Canadian	40.00 @ 42.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.72½	@	3.87½
Prime Qualities—			
Easy-Bleaching Sulphite	3.17½	"	3.75
Strong Unbleached Sulphite	3.17½	"	3.75
News Grade, delivered			
Unbleached Sulphite	58.00	"	63.75

(On Dock, Atlantic Ports)

Kraft Bleached	4.12½	"	—
Kraft Light & Strong	3.50	"	3.90
Kraft No. 1	3.40	"	3.80

(F. o. b. Pulp Mill)

Kraft Domestic and Canadian	2.75	"	3.37½

(Delivered)

Soda Bleached	3.30	"	—

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.38	@	6.53
Silesias No. 1	4.50	"	4.65
New Unbleached	6.25	"	6.50
Blue Overall	4.15	"	4.50
Fancy	3.25	"	3.50
Washables	2.00	"	2.15
Mixed Khaki Cuttings	2.75	"	3.00
O. D. Khaki Cuttings	3.00	"	3.15

Old Rags

White, No. 1—			
Repacked	3.50	"	3.65
Miscellaneous	2.75	"	3.00
White, No. 2—			
Repacked	2.50	"	2.75
Miscellaneous	2.00	"	2.25
Thirds and Blues—			
Repacked	1.50	"	1.65
Miscellaneous	1.10	"	1.25
Roofing Rags—			
No. 1	1.15	"	1.20
No. 2	1.00	"	1.05
No. 3 (bagging)	.90	"	1.00
No. 4	.60	"	.65
No. 5A	.60	"	.65

Foreign Rags

All prices nominal.

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—

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POCKET PAPER SCALE
Made in U.S.A.

Gives ream weight of sizes 22x34—24x36—25x38 by weighing a 2x4 in. sample. Price $25.00 complete in neat plush lined box and templates.

FULLY GUARANTEED $10.50 with leather case. Old, inaccurate scales, micrometers and other testers recalibrated and made over like new.

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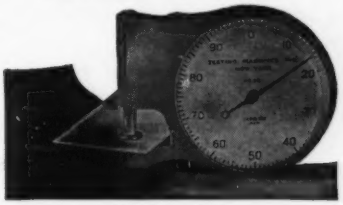

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BLEACHED SULPHITE AND SODA PULP
BLEACHED AND UNBLEACHED KRAFT PULP

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Cass, West Virginia
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DURO —our standard returnable paper mill core of plus-standard quality.
EN-DURO —a super-quality core to meet demands for extra strength and service.

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RHINO —an extremely tough and strong core with a low cost that meets the market for a standard product giving superior service.

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sonoco PAPER CARRIERS

No. 4 White Linens.	2.25	@	3.25
No. 1 White Cotton.	4.25	"	4.75
No. 2 White Cotton.	3.25	"	3.75
No. 3 White Cotton.	2.50	"	3.00
No. 4 White Cotton.	1.90	"	2.20
Extra Light Prints..	2.00	"	2.40
Ord. Light Prints...	1.75	"	2.15
Med. Light Prints...	1.55	"	1.95
Dutch Blue Cottons.	2.25	"	2.50
French Blue Linens.	3.00	"	—
Checks and Blues...	2.00	"	—
Linsey Garments....	1.90	"	2.00
Dark Cottons.....	1.50	"	1.60
Old Shopperies.....	1.30	"	1.45
New Shopperies.....	1.45	"	1.50
French Blues	2.25	"	2.50

Old Rope and Bagging

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	2.50	@	2.75
Wool Tares, light....	2.00	"	2.25
Wool Tares, heavy..	2.12½	"	2.25
Bright Bagging	2.25	"	2.50
Manila Rope—			
Foreign	5.25	"	5.50
Domestic	5.25	"	5.50
Jute Threads.....	2.75	"	3.00
Sisal Strings	2.10	"	2.35
Mixed Strings.....	1.10	"	1.20

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	3.10	@	3.25
Ordinary Hard White No. 1....	2.25	"	2.50
Soft White No. 1..	1.80	"	1.90
Soft White Extra..	2.50	"	2.60
Flat Stock—			
Stitchless	1.10	"	1.25
Overissue Mag.....	.90	"	1.00
Solid Flat Book....	.80	"	.85
Crumbled No. 1...	.70	"	.75
Ledger White Stock.	1.60	"	1.70
Ledger Stock Colored	1.20	"	1.30
Manila—			
New Env. Cut....	1.70	"	1.80
New Cuttings.....	1.30	"	1.40
Old Kraft Machine Compressed bales..	1.40	"	1.50
News—			
No. 1 White News	1.75	"	1.90
Strictly Overissue..	.70	"	.75
Strictly Folded....	.55	"	.60
Corrugated	.45	"	.50
No. 1 Mixed Paper..	.35	"	.40

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.18	@	—
White Hemp.....	.18	"	—
Fine Polished—			
Fine India	.22	"	—
Unpolished—			
Box	.16	"	—
Paper Makers.....	.13	"	—
Tube Rope.....	.14¾	"	—
Wall Paper.....	.16	"	—
Wrapping	.16	"	—
Soft Fiber Rope...	.14	"	—
Cotton	.24	"	—

(Hard Fiber)

Medium Java.....	.10	"	—
Mex. Sisal	.09½	"	—
Manila	.23	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White No. 1.	.07	@	.07¼
New White No. 2.	.03½	"	.04
Light Silesias.....	—	"	.04½
Silesias, No. 1.....	—	"	.04
Black Silesias, soft	—	"	.03
New Unbleached..	.06	"	.06¼
Washable Prints...	.02¼	"	.02½
Washable No. 1..	—	"	.01½
Blue Overall.....	.04	"	.04½
Cottons—According to grades—			
Washable shredding	—	"	.01½
Fancy Percales....	—	"	.03
New Black Soft...	.02½	"	.02¾
New Light Seconds	—	"	.04
New Dark Seconds	—	"	1.50
Khaki Cuttings—			
No. 1 O. D.....	.03½	"	.03¾
No. 2 Mixed.....	.01¾	"	.02
Corduroy	.01¼	"	.01½
New Canvas.....	.04½	"	.05
New Black Mixed.	—	"	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	"	3.00
Thirds and Blues—			
Miscellaneous	1.35	"	1.50
Repacked	1.55	"	1.65
Black Stockings (Export)	3.50	"	4.00
Roofing Stock—			
Foreign No. 1....	Nominal		
Domestic No. 1...	1.30	"	1.35
Domestic No. 2...	1.10	"	1.15
Roofing Bagging..	1.00	"	1.05

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	Nominal		
Domestic	2.25	@	2.50
Manila Rope.....	—	"	5.50
Sisal Rope.....	2.00	"	2.25
Mixed Rope.....	.75	"	1.00
Scrap—			
No. 1.....	2.55	"	2.75
No. 2.....	—	"	1.50
Wool Tares, heavy..	3.75	"	4.00
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	2.25	"	2.50

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.40	@	2.50
No. 2 Hard White	2.10	"	2.15
No. 1 Soft White.	1.90	"	2.00
No. 2 Soft White.	1.60	"	1.75
No. 1 Mixed.....	.90	"	1.00
Solid Ledger Stock..	1.90	"	2.00
Ledger Stock, white.	1.50	"	1.60
Ledger Stock, colored	1.20	"	1.25
No. 1 Books, heavy..	.80	"	.85
Manila Cuttings.....	1.75	"	1.80
Print Manila.....	.50	"	.55
Container Manila....	.40	"	.45
Kraft Paper	1.40	"	1.45
No. 1 Mixed Paper..	.35	"	.40
Straw Board Chip...	.35	"	.40
Binders Board Chip..	.35	"	.40
Corrugated Board...	.55	"	.60
Overissue News.....	.70	"	.75
Old Newspapers.....	.60	"	.65

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.90	"	3.00
No. 1 Soft White	2.75	"	2.50
No. 2 Mixed.....	.75	"	.80
Solid Ledger Books..	1.50	"	1.75
Overissue Ledger Stock	1.75	"	2.00
Mixed Ledgers.....	1.50	"	1.75
No. 1 Heavy Books	1.10	"	1.20
No. 1 Books, Light..	.75	"	.85
Crumpled Stitchless Book Stock	.75	"	.85
Manila Env. Cuttings	1.85	"	2.00
Manila Envelope Cuttings, extra quality	2.35	"	2.60
White Blank News..	1.40	"	1.50
No. 1 Kraft.....	1.25	"	1.30
Extra No. 1 Kraft..	1.45	"	1.50
Mixed Papers.....	.30	"	—
Print Manila	.55	"	.60
Container Manila....	.60	"	.70
Old Newspapers.....	.50	@	.55
Paper Wool Strings.	.95	"	1.10
Overissue News.....	1.00	"	1.10
Box Board Chips....	.40	"	.45
Corrugated Boxes...	.45	"	.50
Kraft corrugated boxes	.85	"	.95
New Kraft Corrugated Cuttings	1.35	"	1.40
Screening Wrappers.	.70	"	.80

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	3.00	"	—
Domestic	2.80	"	3.00
Sisal Rope.....	2.90	"	3.00
Mixed Rope	.85	"	1.00
Transmission Rope—			
Foreign	2.50	"	2.75
Domestic	2.75	"	2.90
Soft Jute Rope.....	3.50	"	3.75
Manila Rope—			
Foreign	5.25	"	5.35
Domestic	5.50	"	5.75
Jute Carpet Threads	2.00	@	2.25
Bleachery Burlap....	4.00	"	3.25
Scrap Burlap—			
Foreign	2.60	"	2.65
Domestic	2.60	"	2.75
Scrap Sisal.....	2.75	"	3.00
Scrap Sisal for Shredding	2.90	"	3.25
Wool Tares—			
Foreign	2.70	"	2.80
Domestic	2.50	"	2.60
Aust. Wool Pouches.	2.75	"	3.00
New Burlap Cuttings	3.75	"	4.00
Heavy baling bagging	2.75	"	3.00
Paper Mill Bagging..	1.75	"	2.00
No. 2 Bagging.....	.75	"	.80

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints.	—	@	.03
Fancy Percales....	.04	"	.04¼
New White No. 1.	.06¼	"	.07
New Light Flannelettes	.05	"	.05¼
Canton Flannel, Bleached	.0635	"	.0650
Underwear Cutters, Bleached	.06	"	.0635
Silesias No. 1.....	.05	"	—
New Black Silesias..	3.00	"	3.25
Red Cotton Cuttings	.04	"	.05
Soft Unbleached....	.06	"	.06¼
Blue Cheviots.....	.04¼	"	.04½
Fancy	.02	"	.02½
Washable	.02	"	.02½
Cottons—According to Grades—			
Blue Overalls.....	.04¼	"	.04¾
New Black, Soft..	.03	@	.03¼
Khaki Cuttings.....	.02¼	"	.03
O. D. Khaki.....	.02½	"	.03¼
Corduroy	.06¾	"	.07¼
New Canvas.....	.06¾	"	.07¼
B. V. D. Cuttings...	.06½	"	.06¾

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	2.75	@	3.75
Miscellaneous	2.40	"	2.60
White No. 2—			
Repacked	1.90	"	2.00
Miscellaneous	2.00	"	2.25
Twos and Blues.....	2.00	"	2.25
Old Blue Overalls...	1.60	"	2.00
Thirds and Blues....	1.50	"	1.75
Miscellaneous	1.25	"	1.35
Black Stockings.....	3.50	"	4.00
Roofing Stock—			
No. 1.....	1.20	"	1.30
No. 2.....	.95	"	1.00
No. 3.....	.85	"	.95

Foreign Rags

(F. o. b. Boston)

Canvas	.04¼	@	—
Dark Cottons.....	(nominal)		
Dutch Blues.....	(nominal)		
New Checks and Blues	(nominal)		
Old Fustians.....	(nominal)		
Old Linsey Garments.	(nominal)		
New Silesias.....	(nominal)		

CHICAGO

Waste Paper

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings....	3.15	@	—
No. 1 Hard White	2.50	"	2.65
No. 1 Soft White.	2.00	"	2.20
Ledger and Writings	.85	"	.95
Solid Books.....	.95	"	1.10
Blanks	1.50	"	1.60
Krafts	1.40	@	1.50
New Kraft Cuts....	1.60	"	1.75
Overissue News.....	1.00	"	1.10
Old Newspapers—			
No. 1 Folded News	.70	"	.80
No. 1 Mixed Paper	.40	"	.50
Roofing Stocks—			
No. 1.....	.95	"	1.00
No. 2.....	.85	"	.90

Continental-Diamond Redesigns Line

Recognizing the need for faster and more efficient moving of materials and parts in process,—the Continental-Diamond Fibre Company of Newark, Del., has completely redesigned and recataloged its line of Diamond vulcanized fiber hollow ware.

This redesign is based on greater standardization, but with sufficient flexibility so that standard equipment can be readily modified to efficiently meet any specific individual material handling problem and still not penalize the buyer in the way of price for slight deviations from standard specifications. For example, usually a special box or truck of the same over-all dimensions will cost no more than one of standard specifications.

The Diamond fiber hollow ware line is complete from light weight tote boxes to heavy duty steel clad trucks. The new catalog just issued is a complete handbook on how to quickly and efficiently get things from here to there. Manufacturers with material handling problems should write for catalog HW—18.

Buys Papers Under Walsh-Healey Act

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 12, 1940—During the week ended January 25, the Government purchased $74,091.50 worth of paper and allied products under the Walsh-Healey Act as follows: $11,052.00 worth blueprint paper for Treas. Proc., DC, from J. H. Weil & Co., Philadelphia, Pa.; $21,050.00 worth of stencil paper for War, QMC, Brooklyn, from A. B. Dick Company, Chicago, Ill.; and $41,989.50 worth of toilet paper for War, QMC, Brooklyn, from Ashland Paper Mills, Inc., Brooklyn, N. Y.